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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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BRITISH SHIPPING, SHIPBUILDING AND COMMERCE.

(CONDITIONS AS PER H. E. MOSS & CO.'S CIRCULAR.)

"Since we issued our last Circular, a great change has taken place in the Shipping Trade, and the change has been of an unfavorable nature. Shipowners up to last autumn had enjoyed three very prosperous years, but about November last freights commenced to fall, and have since continued to do so. Whether this depression is to be of a temporary character, or whether it is only the commencement of a long period of bad times for shipping, it is impossible to predict with any degree of certainty."

The year 1901 commenced with 1,269,919 tons of merchant shipping being under construction in the United Kingdom, as against at the corresponding period of 1900, 1,306,751 tons, and against at the corresponding period of 1899, 1,401,087 tons; but during the first three months of the present year a number of contracts had been placed with builders, as on March 31st, 1901, the tonnage under construction was 1,303,116 tons, as against at the corresponding period of 1900, 1,260,422 tons. If we seek the reason for the increased tonnage under construction on 31st March last, we think that it is to be found in the fact that the large Companies and Lines (which, owing to the high prices ruling last year, had deferred placing their orders for boats which they absolutely required for carrying on their services) took advantage of the reduction in prices which ship-builders showed themselves willing to make, and made contracts for a considerable amount of tonnage.

"Shipbuilders were enabled to accept lower prices by the reduction in the price of steel, prices of ship plates falling from, say, £8 to £6 per ton, and they were doubtless further induced to do so by an anxiety to book ahead, so as to ensure having work for their yards during the dull time they naturally anticipated would follow the depression in freights. Prices for new vessels may be said to have reached their highest point last August, and we should say that, at the present time, orders can readily be placed at a reduction of ten per cent from the prices that were then ruling."

"A fair number of second-hand steamers have changed hands since the beginning of the year, the owners having shown a willingness to meet the market, and accept lower prices. Very few sailing ships were sold during the first three months of the year, and prices may be said to be 12 to 15 per cent lower than they were at the end of last year, but at the lower prices now quoted by owners, there has lately been a better enquiry."

"The record of the Atlantic is still held by the "Deutschland" of the Hamburg-American Line, and when she loses it, it will be to the new express steamer now building in Germany for the Norddeutscher Lloyd. Are our leading steamship companies resigned to letting the Blue Ribbon of the Atlantic leave us for ever? At present it looks like it.

"Great interest has been aroused by the recent purchase, by Americans, of the majority of the shares in the Leyland Line. As the matter at present stands, it is simply an investment of American money in steamers under the British flag; but there is no doubt that the purchasers are convinced that by new, or special legislation, these steamers will, before long, be able to pass under the American flag. This deal, therefore, foreshadows larger things and apparently marks the determination of the Americans to once more have their share of the ocean-carrying trade of the world. There are numerous rumors current as to other big steamship purchasers, amalgamations etc., by foreigners and although at present the tendency is towards exaggeration, we have no doubt that important negotiations are now taking place. The result to the British shipowners will be that they will have to face severer foreign competition in the future, and it remains to be seen whether our principal steamship companies will meet the increased competition in such a way as will preserve the supremacy of the British mercantile flag."

THE AMERICAN LINE STEAMER PHILADELPHIA.

The American line steamer Philadelphia, late Paris, has had quadruple-expansion engines, constructed on the Yarrow, Tweedy, and Schlick system, fitted by Messrs. Harland and Wolff, Limited, Belfast, Ireland. The high-pressure cylinder is placed close to the low-pressure cylinder, and the two intermediate-pressure cylinders adjoin each other. Excepting for the low-pressure cylinder, piston valves are fitted throughout; but a difference is made from usual practice in connection with the low-pressure cylinder in respect that two slide valves are fitted instead of one, and these valves, which are double ported, are placed one on either side of the cylinder, the steam being passed from the second intermediate cylinder into a receiver, which is common to both slide valves. Balance weights have been used on the high-pressure and intermediate cranks to make up for the less weight as compared with the low and second intermediate engines respectively. Forged steel has been used in all the working parts, and the front frame is of the usual cast-iron forked column, while square supports are used at the back, the condenser being separate from the engine. The cylinders are all separate castings. It is anticipated that the new engines will give higher power than the original triple-expansion engines, and that consequently the speed will be considerably improved.

WEATHER TEMPERATURE RECORDS.

In the first volume of the transactions of the American Philosophical Society of Philadelphia is a very interesting letter from Dr. J. Lorimer, of Pensacola, "West Florida," from which it appears that about 1768 he kept a record of his Fahrenheit thermometer three times a day for a whole year. Prof. Cleveland Abbe, U. S. Department of Agriculture, editor of the Monthly Weather Review, is very desirous of obtaining some clew to this ancient temperature record. Dr. Lorimer states that his extremes range between 17° and 98° F. It is greatly to be hoped that his manuscript record has escaped the ravages of time. As he was then surgeon to the British troops at this station it is possible that his record is still preserved in the British archives in London.

FOREIGN STEAMSHIP SUBSIDIES.

During the past five years the bounties paid by foreign Governments have increased from £272,116 to £318,988 in the case of Austria, from £65,122 to £80,755 in Hungary, from £1,569,768 to £1,715,271 in France, from £250,000 to £325,000 in Germany, from £100,750 to £584,696 in Japan, from £260,000 to £374,700 in Russia, and from £24,238 to £28,266 in Sweden and Norway. In the case of Belgium, bounties have been discontinued since 1852, although postal subventions are paid by the Government to various foreign shipping companies, whilst in Holland an indemnity is given for the regular transport of mails and parcels. It will be seen from the above that France takes the first position from the amount of the subsidy, Japan comes second, Russia third, Germany fourth, and Austria fifth. The position of England is shown from the fact that subsidies are given by the Post Office for mail contracts, by the Admiralty in connection with the merchant cruisers, and by the Colonial Office for the line of steamers between Jamaica and Great Britain. In face of the considerable sums received by foreign companies it is not surprising that they are enabled to establish new steamship lines in different parts of the world, and to exhibit an enterprise which is now scarcely existent in the United Kingdom. Trade follows the flag, and it would be disastrous for the commerce of this country if the initiative for extensions of the merchant marine of the world should always be taken, as it now appears to be the case, by foreign companies. We have no interest in suggesting that one class should be subsidised and not another, says the Mechanical World, but where our competitors promote trade by the grant of steamship subsidies, it would be fatal for Great Britain to neglect any opportunity for taking similar action, in the hope of furthering the commerce of this country in the markets of the world. Our national prosperity depends upon that of our merchant marine, and for that reason it should be supported by the Government in the interests of the trade of the whole country.—Engineers' Gazette, London.

THE NEW SHIPPING BILL.

According to the Washington correspondent of the Philadelphia Ledger, the Shipping Bill will be brought up by its friends early in the 57th Congress, with redoubled energy and determination. So far as can be learned, the proposition that was fought for in the last Congress will remain practically unchanged. Senator Frye, as chairman of the Committee on Commerce, and Senator Hanna, by reason of his authority as chairman of the National Republican Committee, will doubtless be charged with the duty of securing the passage of the bill and the permanent establishment of the subsidy system as an element of protection policy looking toward the development of the United States as a commercial world power. It is said that Senator Frye will not urge any radical amendment of the bill, and will seek to secure its acceptance by the opposition by concessions on minor and unimportant points.

Navigable Waters—Obstruction of Channel by Fallen Drawbridge—Right of Action for Private Injury.—Where the owner of a bridge over a navigable channel negligently permitted the draw of a bridge to improperly obstruct the channel, the owner of sea-going vessels which before the creation of the obstruction, had sailed with cargoes for points of discharge in the channel above the bridge, and of vessels which were above the bridge when the obstruction was created, may, if the vessels were prevented by the obstruction from passing up and down the channel when necessary to do so, maintain suits in admiralty to recover damages in the way of demurrage, regardless of the local law. New York, N. H. & H. R. Co. vs. Piscataqua Nav. Co. et al., 108 Fed. Rep. (U. S.) 92.



DETROIT.

Special Correspondence to the Marine Record.

The hull of the old passenger steamer Greyhound will be offered for sale this winter.

The U. S. S. Yantic in commission by the State as a Naval Reserve training ship returned to her moorings on Wednesday after drilling recruits for a week.

The body found floating in Lake Huron by H. C. Bristol on Friday last was identified by Walter Scott, of Chicago, as his son George, who was lost off the Baltimore. The body was brought here for burial.

Dunbar & Sullivan, dredging contractors of Buffalo, will remove their entire plant to Detroit next month. The company has a large government contract at the Limekilns and will be nearer operations here.

Capt. August Ames, of Detroit, formerly master of the John Harper, of the Gilchrist fleet, will sail the new steamer Colonel, launched on Saturday. Capt. Ames is now in Detroit and will superintend the fitting out of his new command.

The steel steamer Harvard, Capt. H. Peterson, of the steel trust fleet, cut down the schooner Myron Butman, at Bar Point on Monday. The Butman has been raised, and towed to Toledo by the steamer Baldwin. Her bow is nearly cut off.

The jury at East Tawas, Mich., in the inquest over the body of Geo. A. Scott, picked up after the wreck of his vessel, found that the steamer Baltimore was unseaworthy and held the master and owners at fault. It is now in order for the Chicago owners to be heard from as the late captain was lost with the vessel.

Much sympathy is expressed for Assistant Postmaster Mayworm in the loss of his promising young son Augustus, who was fatally injured in an accident. Mr. Mayworm, Sr., made many warm friends among marine men while he was secretary of the Riverside Iron Works, Samuel F. Hodge & Co., Atwater street.

The steamer Shenandoah was held here on Friday on account of inability to ship firemen who could stand the heat in her fire-hold. Four men were disabled on the last trip, and James McPhail was sent to the marine hospital in a serious condition on the arrival of the steamer at Detroit. The Shenandoah is a wooden steamer of the Davidson fleet, and it has never been said that she was a hard firing boat previous to this season.

The new steel steamer Gilchrist, Capt. C. T. Gunderson, bound down, and the H. E. Runnels, bound up, collided near Stag Island on Monday. The damage to the Gilchrist was not learned, but she struck the Runnels a glancing blow on the starboard bow, breaking some plank. The Runnels will receive temporary repairs at Port Huron if found necessary. How the vessels collided is not made clear but it is said to look like gross carelessness.

There is some talk of an organization being effected next winter comprised of masters and mates. There are a number who think they have not been treated quite right this season and the engineers' late strike is still fomenting among the people sailing to a greater extent than is supposed by those on shore. There is already a masters' and pilots' association formed but this institution, like it was said of the engineers' society, does not interfere with wages or minor disputes.

Botsford & Jenks, of Port Huron, Mich., will build an elevator at Port Edward, a short distance north of Sarnia, Ont., opposite Port Huron, if the local authorities will exempt them from all taxes for twenty years, excepting school taxes on an assessment of \$25,000. The elevator will be built of steel on the tank storage system with a capacity of 1,000,000 bushels. The main elevator building will hold some 400,000 bushels. Behind this building will be rows of steel tanks, each to contain 25,000 bushels.

The Detroit Ship Building Co. is now one of the busiest as well as one of the most important industries in the State. Their yards at Wyandotte are filled with orders for high-classed steel passenger and cargo steamers, and the dry docks at Springwells and Orleans street are simply rushed with repair work. Much credit is due the present manage-

ment for the excellent workmanship as well as the volume of business now being taken care of. The Detroit Ship Building Co. always enjoyed an enviable reputation and it is only just to say that its long established credit is being splendidly lived up to.

The Northwestern, which left Chicago April 24 for Europe, and which had such trouble with the ice jam and the St. Lawrence rapids, passed Detroit for Chicago from Europe on Monday night. The Northman is at Buffalo on the return trip and will reach Chicago a few days after the Northwestern. It is safe to say that the freight earned by the Northwestern in her three months' cruise won't be enough to fit her out for another trip, though the second boat, the Northman, had a little better luck all through, but talking about four round trips between Chicago and Europe during the season of navigation is all nonsense, two seems about the limit.

The Executive Board of the International Longshoremen's Association adjourned at Toledo on Tuesday. It has been decided to consolidate the Chicago and Detroit offices and make Detroit the headquarters. Secretary Barter was authorized to issue charters to ladies' auxiliaries, and will prepare a special ritual for this branch of the organization. Motion was passed to prosecute to the full extent of the law John Kane, a dock contractor, of Erie, Pa., who shot and killed William Harrington, a striking longshoreman, in June. Kane is now out under \$5,000 bail. While visiting England as a fraternal delegate of the A. F. of L. President Keefe was authorized to look into the working of the Longshoremen's organization of Great Britain with a view of bringing about a consolidation of all the longshoremen of the world.

CHICAGO.

Special Correspondence to The Marine Record.

Shipments of grain from Chicago and South Chicago last week were 3,161,000 bushels.

A dispute in the Menominee and Marinette Vessel Loaders' Union has resulted in an agreement that members shall work only in the towns where they reside at the rate of 50 cents per hour.

The steam barge Charles S. Neff, built by the Jenks Ship Building Co., Port Huron, arrived at Chicago Monday on her first trip. The cargo consisted of 1,153,000 feet of pine lumber, loaded at Washburn.

The Lake Line Agents' Association has accepted the resignation of T. T. Morford as its president, owing to his removal to Buffalo as general manager of the Union Steamboat and Lehigh Valley Lines. Mr. Morford was made an honorary life member. J. C. Egans has been elected president of the association and H. B. Ford, secretary.

The American Ship Building Co. has now under contract at their several lake shipyards a total of 18 steamers, 3 of which are to be passenger boats. The several last orders are for medium-sized boats with general hull dimensions of 366x48x28, triple expansion engines and Scotch type boilers. The last two orders were closed this week and figuring is still being done on more new tonnage.

A congestion of lumber on the docks is preventing any more charters being made and at Lake Superior ports lumber is piling up with such rapidity that some of the mills will be compelled to shut down if the accumulation is not soon relieved. The demand for lumber has not lessened; if anything it is on the increase and, from present indications, it will continue to increase with the approach of fall.

The Goodrich line, in Chicago, has put into service a telephone connection with steamers lying at the wharf. A telephone instrument in the main saloon is connected with the system of the Chicago Telephone Co. and enables passengers on the steamer, before she leaves the dock, to call up friends in any part of the city. This is the first service of the kind that has been arranged in Chicago. It is probable arrangements will be made so that steamers will be attached to the Milwaukee telephone system when lying in that city.

Grain shipments for the last week from Chicago and South Chicago were 3,161,000 bushels, an increase of 757,000 bushels for the week. Of the total, 1,529,000 bushels were wheat to Buffalo. The movement of corn was light, as it is selling at the seaboard at relatively lower prices than here. The shipments of corn were only 393,000 bushels to Buffalo, and to all ports 737,000 bushels of all grains, or 72 per cent. of the total, and showed a gain of 515,000 bushels over the previous week. Business with the Canadian ports was lighter, 498,000 bushels, a loss of 75,000 bushels. Shipments to Ogdensburg were 310,000 bushels.

W. J. Wood, draughtsman, in the employ of the Goodrich Transportation Co., who is drafting the plans for Milwaukee's new fireboat, says that several of the passenger lines at Chicago have communicated with him about plans for large and fast steamers, but have reached no definite conclusion in any instance. Wood thinks they are simply feeling around for figures, and that some of them have no other motive than to scare the other fellow. Even if they did mean business, Wood thinks that they would find it hard to get a new boat built in any of the lake yards ready for delivery before July or August of next year.

It is evident that the old swing bridge is about to become obsolete. At least the old swing bridges in Chicago, and crossing the Chicago river along the extensions of a number of her principal thoroughfares, will soon be consigned to the junk shop. The latest and most practical innovation in the bridge building line is the Scherzer rolling lift bridge. The Taylor street bridge is nearly finished, and plans have been completed for a State street bridge of the Scherzer pattern. This new bridge will give a clear, unobstructed channel for navigation 140 feet wide. The movable span, center to center of trusses, will be 40 feet 6 inches wide, with two sidewalks, each 11 feet wide.

The Dunkley Co., of Kalamazoo, Mich., has about closed a contract for a new \$200,000 steel steamer to run between Chicago and South Haven. She will be a side-wheeler capable of carrying 3,000 passengers and a large amount of freight, and equipped with every modern device, including a refrigerating plant to force cold air through the vessel, and a novel plan of Pullman berths similar to those used on sleeping cars, giving wide seats in the daytime and drop berths at night. The steamer will not be delivered to her owners before August 1, 1902. The Dunkley Co. will make every effort to centralize and capture the Lake Michigan fruit and vegetable trade and also cater strongly to the passenger service.

The Northwestern, Capt. Atkinson, reached here on Wednesday, after a successful Atlantic voyage of 84 days. Everyone is pleased to learn of her safe return, and we now know that a Chicago-built steamer can cross the Atlantic as well as those built at West Superior, Wis. There are a couple of dories herring-boning the pond about this time also, one spoken recently had but a single occupant, the other is doubly manned, that is, contains one of each sex. Here is what a daily paper has to say on this subject: "The owners of the boats admit that the insurance rates are ruinous, and that the freight rates received were abnormally low, but they say they will get lower insurance rates, and when the route is established and freight flows naturally in that channel they will get more money for carrying cargoes. It is believed also that by husbanding their supplies in better shape the crew can cut down the expense greatly. In all, the first trip was considered nothing more than an experiment, and it is said that this was sufficiently satisfying to the Chicago vessel owners to warrant them in pushing the project. The one thing which was the most reassuring was the discovery that there is enough freight to be moved which the shippers are willing to move by this route to keep not only the four trans-Atlantic liners, but many more, busy for some time to come." The owners may underwrite their own risks, as well as those of shippers and consignees; they may get freight to flow naturally all over the cargoes, but they can't expect Jack to husband his supplies, because he has none; p'raps they can give him something easier and more tangible to husband.

All doubts as to the success of shipping coal to Cuba by barges seems to be eliminated by the successful return to Philadelphia of the tug Cuba, which left more than two weeks ago towing two barges, each of which was loaded with 2,800 tons bituminous coal. The Cuba will start immediately with two more barges carrying 6,000 tons. This looks like a paying proposition, as the investment in tug and four barges is said not to exceed \$250,000, and it is expected that return cargoes of sugar will be quite an item of profit to them as well as the coal freight. The New York Herald says: "Coal and shipping men are elated over the success which has attended the experiment of sending coal in barges to Cuba. The prediction is made that it would not be long before this method of coal transportation would be adopted generally between the United States and ports in the West Indies and Mexico, to say nothing of the possibilities of using these boats in meeting the demand for American coal in European countries, which has sprung up in the last few years."

CLEVELAND.

Special Correspondence to The Marine Record.

Frank Stark, watchman on the steamer Onoko, fell down a hatchway on Monday, while the boat was lying at Lorain, injuries were such that he was not expected to live.

Major Dan. C. Kingman, Corps of Engineers, U. S. A., will have a naphtha launch for use in this river and harbor district. Such a craft has long been needed in the work of inspection, taking harbor soundings etc.

The Great Lakes Towing Co. declared a 1 1/4 per cent. quarterly dividend on Wednesday. The executive board furnished a highly favorable report. Mr. L. M. Bowers, representing John D. Rockefeller, attended the meeting.

If the strike is prolonged the 8,000 ton iron ore carriers will be obliged to seek other cargoes, lumber for instance. With the ballast tanks filled and the heaviest stuff stowed well down, a small forest could be transported in each hull.

The word comes from Conneaut that ore has been shipped so freely during the past few weeks that the furnaces are now being crowded up. The enormous quantity of 579 cars is the highest and best day's work on record at that port, credited to Monday last.

The talk of an order for ten to fifteen new freight steamers which has been going on for several days past is not from a very good source, but there are indications that orders for one or two more steamers from individual vessel owners may be closed within the present week.

It is already known that Major Kingman, Corps of Engineers, U. S. A., will endorse the views of his predecessors, even to carrying on the construction of a breakwater to abreast of Wilson avenue. Major Kingman is also strong on obtaining and maintaining an adequate government dredging plant, presumably so as to shake clear of the grip of the private dredging corporations and contractors.

An effort will be made this week to bring the trouble between the longshoremen and the package freight agents to an end. Recently the men took their case before the longshoremen's convention at Toledo, and asked for assistance. The outcome of this request was that it was decided to send Vice President J. E. Porter to this city to see what could be done. He will meet with the locals by the end of the week, and some decisive steps may be taken.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau for the week ending July 17th: Prevailing wind directions during the week, N. E.; highest velocity, 36 N. W. July 12; mean temperature for week, 75; highest temperature, 85 on July 16; lowest, 65 on July 12. Sunrise and sunset data, computed for local time at Cleveland, July 19 sun rises 4:40, sets 7:31; July 22 sun rises 4:43, sets 7:29; July 25th sun rises 4:46, sets 7:26.

The Barry Bros. Chicago, have overhauled and reboilered those good old steamers, Empire and Badger State, lying at Lorain, according to daily papers, at the same time the parties most interested in Cleveland, retain possession. Well! if we'll only keep at it long enough, either the Chicago parties or some other will be handling the boats shortly. As far as regards wooden tonnage, they are a pair of good old wooden hulls, wholesome, well kept up, and always given everthing they wanted.

There is no let up in the enormous passenger traffic at this port. Buffalo, of course, takes the crowds, but Detroit and upper lake ports enjoy a fair share. For a days outing, local parties are crowding to the favorite resort, Put-in-Bay. In so far as the lake trip is concerned it is quite certain that excursionists are being handled better in every way than in seasons past. There are more facilities, better discipline and order, and a considerable strain of ship-shape courtesy, now found on the Put in-Bay boat. The foregoing were marked features in the past.

The lake barges Verona, T. P. Sheldon, W. S. Crosthwaite and M. S. Bacon, managed in the office of J. C. Gilchrist & Co., returned to lake service from the coast this week. The fleet average about 600 tons each and aged to the tune of three decades, the Sheldon being built at E. Saginaw, in 1871, two others in '73, and one a year later. Mr. Gilchrist, in an interview recently, said that he did not consider the lake boats fitted to go into the coasting trade. The shippers down there and the other vessel men do not take kindly to the lake craft, and in addition there are new conditions to which the lake owners are not accustomed. Just so.

Mr. A. C. Heron, surveyor for Lloyd's Register, London, has opened an office in the Wade Building. He will attend to the business of the Register on the lakes, hold surveys, etc. Mr. Heron is a M. I. N. A., London, which translated signi-

fies, Member of the Institute of Naval Architects. He is also a Liverpudlian. It is rather strange, but the accent or intonation used by a Dickey Sam is slightly different to that of anyone else. Mr. Heron has had a large and valuable experience, but still looks quite a young man to fill the responsible position of surveyor to Lloyd's Register, or, as it might be termed, the senior ship classification society of the United Kingdom.

DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

Shipments of iron ore from the Chicago & Northwestern Railway dock at Ashland thus far exceed those of last season by 35,000 tons.

Calumet has been shipping copper ore at a lively rate all season, but the mines of the Bigelow-Lewison syndicate have held off and now hold 6,000 tons of refined copper at Dollar Bay, which represents a value of \$2,000,000 at a 17 cent. rate. The Quincy mine will probably clean up a neat \$4,000,000 output for the season.

The visit of the revenue cutter Morrill to the head of the lakes resulted in the imposition of a fine of \$500 each on the tugs Wisconsin, Buffalo and Edna for not having their inspection certificates properly displayed. The Wisconsin and Buffalo belong to the Great Lakes Towing Co., and the Edna, a small tug to Ald. Treillion. The Morrill left Duluth on Sunday.

Four years ago the United States Fish Commission began to plant in Lake Superior the steelhead salmon of the Pacific. It was believed that this salt water fish would thrive in the cold, fresh waters of the great lake, and fish of this kind weighing five pounds have recently been caught. As modified in the lake, they are well-shaped, firm, with flesh of a fine red and delicate flavor. The planting will proceed rapidly.

It has been decided by the management of the shipyard at West Superior to spend about \$50,000 in improvements in the equipment, machinery and yards generally. A large portion will go for repairs to the old dry dock. This work will necessitate the employment of a considerable number of men for several weeks. The American Ship Building Co., of which this is a branch, spares no expense in keeping their yards up to all modern requirements.

The steamer Fanchon, recently purchased by A. J. LaFrambois and Frank J. Dion to run about the bay, was reported to the collector of customs by local steamboat inspectors Monaghan and Chalk, charged with proceeding beyond the route specified on her certificate of inspection. The Fanchon's route was limited between Port Huron and Bar Point, Mich., but she recently came to this port without permission. The fine for the offense is \$500.

Duluth now claims and is entitled to the credit of being the home port of the greatest amount of lake tonnage, viz., 287 vessels of 473,776 gross, or 302,953 net tons. Cleveland is given 408,686 tons up to March last, and the Treasury Department has since credited that port with vessels hailing from there which are actually entered here. However, vessels may be built anywhere and given a home port at the time of launching as long as they come here to be enrolled directly afterwards, only it may tend to confusion and a mixing up of custom house figures later, when the tonnage for each district is being compiled.

Lumber shippers, acting under advices from the lower lake ports, cavil at paying \$2.50 on lumber, and hold out for the lower rate. Several able vessels have changed ports to load ore rather than accept the \$2.25 rate. Four cargoes have been taken from Two Harbors for Hamilton, Ontario, by lumber carriers. In this connection, a vessel owner is said to have offered to wager an overcoat with a lumber shipper that lumber freight rates will be \$3 by September and \$4 before the season closes. The wager was not taken. The lumber shippers contend that the situation does not warrant a \$2.50 rate at present, which, of course, is the purest sort of rot.

R. Williams, clerk of the steamer Bon Ami, of the White Line Trans. Co., Capt. Singer, manager, was arrested this week by Port Collector Willcuts on a charge of smuggling liquor into the United States from Canada. Port Arthur is the point from which the liquor is alleged to have been taken. Williams was arraigned before United States Court Commissioner T. H. Pressnell and gave bonds for his appearance. It is thought that considerable smuggling has been carried on during the past few years along north shore ports and now the revenue laws will be more strictly enforced, that is, some attention will be paid to them in the

future. Not everything can be done at once, still as the population increases, laws are being more generally lived up to and so that license may not clash with liberty.

I don't know what's in the atmosphere up here, but there seems to be a good deal of the liberty-loving streak on a contention sort of basis so far as crews are concerned. A few days ago an engineer on the tug J. D. McFadden, filed a libel in the United States Court at Duluth against the boat for his wages, amounting to \$53. On Saturday the captain and owner of the tug James Magee, retaliated by filing a complaint with the steamboat inspectors, charging Simpson with drunkenness. He alleges that on the night of July 3 the man was intoxicated and did not attend to his duties, allowing the water in the boiler to get low, and jeopardizing the boat, while on the morning of July 4, he says, Simpson was found dead drunk on the floor of the fire-hold and unable to perform his duty. If the charges against him are substantiated, it involves the loss or suspension of his license.

Word has been received from Port Arthur, Ont., that the wrecking steamer H. A. Root, of Duluth, and the lighter No. D, 31, have been seized by the Canadian customs authorities for violating the laws of the Dominion, in wrecking the steamer Preston, which was recently abandoned by her crew in Lake Superior. The Root and lighter and the Preston were towed into Port Arthur by the tug Inez. The Root and the lighter owned by A. R. Sinclair & Co., of Duluth, were seized while engaged in lightering the Preston and had put wrecking pumps on her. The laws of the Dominion reversed the business of wrecking ships in Canadian waters for Canadian wreckers and the seizure of the Root is according to the provisions of the coasting laws. The Preston has been arrested by the Canadian Admiralty Court on a claim for salvage by the tug Arcadia, which picked up the wreck after it had been abandoned by the crew. It appears that about 200,000 feet of timber were lost from the steamer's deck load. The timber was for the new Canadian Northern Elevator, at Port Arthur.

FLOTSAM, JETSAM AND LAGAN.

Canada has decided to establish a fast Atlantic steamship service. The proposition has been discussed for five years.

Capt. H. W. Baker, with the wrecker Snook is at Manistique on his way to the schooner William Home to recover pig iron from the boat sunk in 90 feet of water.

The steamer Avon, which recently suffered fire damage near Sault Ste. Marie, has been libeled on a salvage claim of \$25,000 preferred by the owners of the steamer Victory, which helped subdue the fire. Bonds must be furnished for this amount.

Capt. James A. Rodgers, in charge of the Life-Saving Service, has just returned from an inspection of the stations on Lake Superior. He says the heavy gales last fall have done considerable damage to many of the stations. He is now on an inspection of the Lake Huron stations, and will later visit Lake Erie stations.

F. H. Clergue, of the Lake Superior Power Co., Sault Ste. Marie, Ont., has closed a contract for a big barge with the Collingwood Ship Building Co. The new boat will come out at the opening of next season and will be put in the trade between Michipicoten and Lake Erie. She will be 390 feet long, 46 feet beam, 26 feet deep, and will carry 6,500 tons of iron ore.

Canada has shipped 3,500 tons of pig iron from Cape Breton to Glasgow. The freight and other charges amounted to fifteen shillings (\$3.75) per ton. This shipment is due to the bounty offered by the Dominion government on the production of pig iron and which runs to 1907. Formerly Canada received about 10,000 tons pig iron annually from the United Kingdom.

McClure, Phillips & Co. publish "A Sack of Savings," by Frank T. Bullen, a volume of stories of the sea and sketches and essays of life on the ocean, which is, like its author's former story, "The Cruise of the Cachalot," full of the strong salt savor of the ocean, written with a thorough knowledge of the ways of a sailor, and crowded with a wealth of incident and adventure.

It is understood, in Canada, that Mr. Clergue is more pleased with the fact of having placed Canada quite independent of the United States in the matter of iron ore than in any other of his achievements. It is likewise stated that he will soon associate himself with a heavy enterprise in the vicinity of Toronto. All of which sounds very flattering, no doubt, to our Canadian cousins, but the query comes in, why is it thusly?

THE QUESTION OF BOILERS.

FROM LE MONITEUR DE LA FLOTTE, JUNE 8, 1901.

Too much emphasis cannot be placed upon the decision arrived at by the English Commission on boilers, after an exhaustive inquiry for six months, which is still being carried on by it, not only in England, but in various foreign countries.

The Commission has selected four types of generators, from which the Admiralty could choose the apparatus required for the war vessels, while waiting to make a final selection of a solitary type, after thorough examinations and test, which would doubtless extend over several years.

It is proper to state that two of the four boilers selected, the Durr and Yarrow types, with large tubes, were never tried in the English marine, and the third one, Babcock and Wilcox type, was to be submitted to new tests, because the model accepted for the cruiser Encounter is to be different from that of the Sheldrake the only one tested in England. Therefore, it would appear as if the Niclausse boiler occupied a very favorable position, because not only has it been tried with good results for a very long time in England on the Seagull, but in all the great navies of the world it has proved itself equally well.

In consequence of the results obtained on the Seagull and before being aware of the decision of the Commission on boilers, the English Navy Department decided to equip the ironclad cruiser Suffolk of 22,000 h. p. and the sloop Fantome of 1,400 h. p. with Niclausse boilers. Only a few days ago it gave orders to place this type of generators on the ironclad cruiser Berwick of 22,000 h. p., this time in conformity with the findings of said Commission. This last order is the best proof of the favorable impression made on the English engineers by the results obtained in England, and other foreign countries.

In the French navy the Niclausse boiler is used on more than twenty-four vessels, having a total force of 225,000 h. p. In the other foreign navies it is employed as follows:

English navy.—Four vessels with a total of 49,000 h. p.

German navy.—Two cruisers Freya and Gazelle, with a total of 16,000 h. p. These two vessels have just finished their trial tests with full success.

American navy.—Two ironclad cruisers Colorado and Pennsylvania, ironclad Maine and monitor Nevada, a total of four vessels with a combined power of 65,000 h. p.

Italian navy.—Two ironclad cruisers Garibaldi and Francesco Ferruccio, and an ironclad Regina Margherita, making a total of 47,000 h. p.

Spanish navy.—Five installations, among which the Cristobal Colon and the Pelayo, making a total of 24,000 h. p.

Russian navy.—The ironclad Retwisan, cruiser Variag, which bears the record among the large vessels for speed; the gunboat Hrabry and the schoolship Ocean, in all 42,000 h. p.

Japanese navy.—A cruiser of 7,000 h. p., the Yaeyama.

Turkish navy.—A cruiser, the Messoudje, and an ironclad, total 21,000 h. p.

Navy of Argentine.—The schoolship Presidente-Sarmiento of 2,000 h. p.

Chilean navy.—The auxiliary boilers of the cruiser Esmeralda.

Hence there are eleven maritime powers using the Niclausse boiler, with a combined power of 498,000 h. p., to which have to be added 55 merchant vessels, with a total of 50,000 h. p. In the presence of such results it is not surprising that the largest boiler constructors in the world have asked for licenses for building the Niclausse type. At the present date these boilers are constructed:

In England.—By Willans & Robinson at Rugby, and Humphreys, Tennant & Co. at Deptford Pier.

In America.—By the Stirling Co. at Chicago.

In Italy.—By the shipyards of Ansaldo at Genoa, and Hawthorn Guppy at Naples.

In Germany.—By the Krupp Germania shipyards at Kiel.

In Russia.—By the shipyards at Nicolauff.

A RAILWAY CAR FERRY.

Sir W. G. Armstrong, Whitworth & Co., Ltd., England, have launched a vessel, which, although not of large dimensions, is of somewhat more interest than usual. She is intended for carrying railway trains across the Strait of Canso in Nova Scotia, and has been built to the order of the Minister of Railways and Canals of the Dominion of Canada for the Intercolonial Railway. The chief dimensions are: Length, 282 feet, breadth, 48 feet; depth, 17 feet. There are three tracks on the deck, and the vessel is so arranged

that the trains can enter upon the deck at one end and leave it at the other. There is a rudder and a screw propeller at each end of the vessel. As the crossing from side to side of the strait is only short, and time is of great importance, the swinging of the vessel at each end is obviated by this arrangement, and she is ready to receive a second train as soon as she has discharged the first. As the Strait of Canso is frequently full of drift ice during the winter season, special structural arrangements have been made so as to enable the vessel to hold her own under these conditions.

CHARGES AGAINST A FOREIGN CLASSIFICATION SOCIETY.

Classification Societies for shipping are the best that ever happened but not when they take the reins in their own hands as London Lloyds is accused of doing.

Mr. Bellamy, a shipowner of Plymouth, England, in an address before the members of the Chamber of Commerce of that town advocates the United States methods of consular service in their attention to furnishing particulars regarding trade and commerce and in his dealing with the cargo carrying question says: Another important body that shows a lack of sympathy for the British shipowner in his handicapped competition is Lloyd's Committee for the Classification of Ships. There exists what is known as a Lloyd's load-line, which is affixed to the sides of all British ships, and no owner may load his ship deeper than those marks indicate. A very large proportion of ships sailing under foreign flag is also classed by Lloyd's. You will, of course, conclude that the committee, having, in conjunction with the Board of Trade, settled a particular load-line for a particular ship, and decided that such ship becomes unseaworthy if she be loaded deeper, would refuse to grant its class to any ship that did not adopt its load-line. The very contrary is the fact. Most of the foreign ships possessing Lloyd's class ignore Lloyd's load-line altogether. I think such a policy is selfish and unworthy a great illustrious society like Lloyd's, for whilst we must all recognize the great and many services it has rendered to the British shipowner, it owes its present splendid position not to its foreign but to its British clients. I have another grievance, and that is against the Lloyd's underwriters and insurance companies. Why don't they stipulate in their policies on cargoes for the ships to be loaded upon Lloyd's load-line, or charge an extra premium? They agitated in favor of a compulsory load-line as being necessary to lessen the loss of life and property at sea, and notwithstanding this, they issue policies upon cargoes in foreign ships with no particular load-line at precisely the same rate as with a British ship. Is this fair play?

ON THE DEVIATIONS OF THE COMPASS.

(COMMUNICATED.)

The English Admiralty Manual has long been considered an authority on compass deviations, but is now suffering of old age, requiring rejuvenation. Lack of brevity and definiteness are its defects. In dealing with the magnetic forces of a vessel the student is treated to quantities of the first, the second and the third order, and constantly bothered with approximate and exact expressions, the conversion of one into the other, for which even English notations proved insufficient, and German characters had to be resorted to for distinction. The clumsiness of the whole make-up, of forms and algebraic expressions by the yard measure, deters almost everybody from studying the magnetic forces of a vessel, except in a cursory and superficial way.

In our days of commercial enterprises the antipodes are not considered too far distant for commercial intercourse, and shipping has assumed proportions which fifty years ago nobody could have imagined in his wildest dreams. Exchanges of goods, machinery and food-stuffs are made between the Eastern and Western, the Northern and Southern hemispheres, for which the oceans are the highways, demanding a closer study of the magnetic forces acting on a ship's compass, and of their changes on change of geographical position, than in the days gone by.

The solution of any nautical problem demands definiteness and simplicity; there is no time at sea for pondering over abstruse problems and expressions. Everything in this line must be ship-shape, ready for use in an instant, easy of application and so as to insure correct results.

The clumsiness of forms and indefiniteness of formulae in the Admiralty Manual for finding the magnetic forces of a vessel is caused by its failure to divide deviations into their

constituent parts, and to treat each part separately. The deviation of a perfect and properly placed compass aboard ship consists on every course of a constant and a variable quantity; the constant part is called quadrant deviation, and the variable part semi-circular deviation; the former does not change on change of geographical position, but the latter does. Therefore, a change of the deviation total is equivalent to a change of the semi-circular deviation.

The quadrant deviations, as well as the semi-circular deviations, have the peculiar property of being numerically alike on opposite compass courses, the former keeping their sign, the latter changing it. This property of the deviation affords an easy way of separating the quadrant from the semi-circular deviation by simple addition and subtraction of the observed deviations on opposite courses and halving results.

If d and d_1 denote the deviations total on opposite courses, s the semicircular, and q the quadrant deviation,

$$d = s + q \text{ in the eastern semicircle,}$$

$$d_1 = -s + q \text{ in the western semicircle,}$$

the former commencing with North, the latter with South.

Distinguishing deviations on different courses by indices indicating points, the deviations on the eight principal compass points and their constituent parts are shown vertically below one another by the following schedule:

Course	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Dev. total	d_0	d_4	d_8	d_{12}	d_{16}	d_{20}	d_{24}	d_{28}
Sem. Dev.	s_0	s_4	s_8	s_{12}	s_0	s_4	s_8	s_{12}
Quadr. Dev.	q_0	q_4	q_8	q_{12}	q_0	q_4	q_8	q_{12}

From this arrangement will be seen that the quadrant deviations of the eastern semicircle equal half the sum of the deviations total on opposite courses, and the semicircular deviations equal half the difference of the deviations total on opposite courses; subtracting the deviations in the western semicircle from those in the eastern semicircle.

Under this arrangement the exact magnetic co-efficients A, B, C, D, E are found as follows:

$$A = \frac{\tan q_0 + \tan q_4 + \tan q_8 + \tan q_{12}}{4}$$

$$B = \frac{(1+D) \sin s_8}{\cos q_8}$$

$$C = \frac{(1-D) \sin s_0}{\cos q_0}$$

$$D = \frac{\tan q_4 - \tan q_{12}}{2} + E \frac{\tan q_4 + \tan q_{12}}{2}$$

$$E = \frac{\tan q_0 - \tan q_8}{2} - D \frac{\tan q_0 + \tan q_8}{2}$$

The practical working of these formulae, and their superiority to those of the Admiralty Manual, may be illustrated by an example from page 49, third edition of the Admiralty Manual, 1869.

H. M. S. WARRIOR.

Ships-head by Standard Compass.	Deviation.	Ships-head by Standard Compass.	Deviation.
North.	$d_0 = -6^{\circ} 30'$	South	$d_{16} = 5^{\circ} 30'$
N. E.	$d_4 = -13^{\circ} 0'$	S. W.	$d_{20} = 28^{\circ} 35'$
East.	$d_8 = -22^{\circ} 15'$	West.	$d_{24} = 19^{\circ} 15'$
S. E.	$d_{12} = -23^{\circ} 30'$	N. W.	$d_{28} = 3^{\circ} 0'$

Writing down the observed deviations on two horizontal lines for the eastern and western semicircle as indicated below, we have for

N.	N.E.	E.	S.E.
$-6^{\circ} 30'$	$-13^{\circ} 0'$	$-22^{\circ} 15'$	$-23^{\circ} 30'$
5 30	28 35	19 15	3 0

$$\text{Sum, } -1^{\circ} 0' - 12^{\circ} 0' = -41^{\circ} 35' = \frac{\tan q_4 - \tan q_{12}}{2}$$

$$\text{Diff., } 0^{\circ} 30' - 7^{\circ} 48' = -1^{\circ} 30' = \frac{\tan q_0 - \tan q_8}{2}$$

$$\text{Half sum, } 0^{\circ} 30' - 1^{\circ} 30' = -1^{\circ} 0' = \frac{\tan q_4 + \tan q_{12}}{2}$$

$$\text{Half diff., } 7^{\circ} 48' - 1^{\circ} 30' = 6^{\circ} 18' = \frac{\tan q_0 + \tan q_8}{2}$$

$$\text{For the pts., } 0^{\circ} 30' - 4^{\circ} 0' = -3^{\circ} 30' = \frac{\tan q_4 - \tan q_{12}}{2}$$

$$q_0 = -0^{\circ} 30' \tan = -0.00873; \frac{\tan q_4 - \tan q_{12}}{2} = 0.15796$$

$$q_4 = 7^{\circ} 48' \tan = 0.13698; \frac{\tan q_4 + \tan q_{12}}{2} = 0.02048$$

$$q_8 = -1^{\circ} 30' \tan = -0.02619; \frac{\tan q_0 - \tan q_8}{2} = 0.00873$$

$$q_{12} = -10^{\circ} 15' \tan = -0.17794; \frac{\tan q_0 + \tan q_8}{2} = -0.01746$$

$$-0.00873 + 0.13698 - 0.02619 = -0.17794$$

Therefore, A = $\frac{-0.00873 + 0.13698 - 0.02619 - 0.17794}{4}$

$$\begin{aligned}
 &= 0.07588 \\
 &\quad - 4 \\
 &= -0.01897 \\
 E &= 0.00873 + 0.158. 0.0175 \\
 &= 0.00873 + 0.00277 \\
 &= 0.01150 \\
 D &= 0.15796 - 0.0115. 0.02 \\
 &= 0.15796 - 0.00023 \\
 &= 0.15773 \\
 &= 1.15773. 0.35429 \\
 B &= - 0.99966 \\
 &= -0.41030 \\
 &= 0.84227. 0.10453 \\
 C &= - 0.99996 \\
 &= -0.08804
 \end{aligned}$$

A comparison of these values with those of the Admiralty Manual shows a close agreement. The Admiralty Manual gives $A = -0.020$; $B = -0.414$; $C = -0.090$; $D = 0.158$; $E = 0.012$. The last figures from which B is derived in the Admiralty Manual are $1.158 \times 0.354 = -0.410$ and not -0.414 as stated.

To find the exact coefficients by the complicated formulae of the Admiralty Manual, 30 different quantities in sine and cosine have to be looked up, preparatory to starting the reckoning proper, while by the above method but 8 quantities are required, to which preference must be given at all hazards.

As the quadrantal deviation and its coefficients do not change on change of place, it becomes an easy matter on change of geographical position to find B and C from observations of the deviation on the 4 cardinal compass points, as the preceding formulae indicate.

The unchangeableness of the quadrantal deviation permits, however, a further reduction of the observations to two, when taken on two adjacent cardinal points. According to the schedule above, showing the relation between the deviation total and its constituent parts, the quantities s_0 and s_8 , entering the formulae for B and C are found from the following headings:

$$\begin{aligned}
 \text{Heading North } s_0 &= d_0 - q_0 \\
 " \text{ East } s_8 &= d_8 - q_8 \\
 " \text{ South } s_0 &= -d_{16} + q_0 \\
 " \text{ West } s_8 &= -d_{24} + q_8
 \end{aligned}$$

Therefore, headings on North and East or West, and on South and East or West, furnish the required quantities, when the quadrantal deviation is known from previous observations. This fact renders it very easy in practice to find B and C by the above formulae, and by means of B and C the change of the semi-circular deviation and consequently also the change of the deviation total for every course.

The formulae for the semi-circular deviation is:

$$\sin e = \frac{F \sin(e+a) \cos q}{H}$$

and the quadrantal deviation is found from

$$\tan q = \frac{G \sin(2e+r) + A}{I - G \cos(2e+r)}$$

e is the compass course; $F = \sqrt{B^2 + C^2}$; $G = \sqrt{D^2 + E^2}$; H

$\tan a = \frac{C}{B}$; $\tan r = \frac{E}{D}$. As the denominator is the same in

both formulae and known from previous computations of the quadrantal deviation it is very easy to find s .

A graphical solution of all these problems is given in the MARINE RECORD of January 20 and 27, 1898, to which reference is had. Besides, B is found from a triangle in which $I + D$ is the basis and s_8 and $90 - d_8$ are the angles at the basis; B equals the side opposite s_8 . Similarly, C is found from a triangle in which $I - D$ is the basis, and s_0 and $90 - d_0$ are the angles at the basis; C equals the side opposite s_0 . B has always the sign of the deviation on East; C of the deviation on North.

A verification of the correctness of results is indirectly obtained from an observation of the deviation on the quadrantal point available on the same swing of the vessel to two adjacent cardinal points, by comparing the computed deviation for the quadrantal point with the observed deviation.

From the preceding it is evident that the reconstruction of the whole deviation table, on change of geographical position, requires only observations of the deviations on two

adjacent cardinal points; — a great boon in practice.

The bulkiness of the Admiralty's complicated formulæ, and the great amount of labor required to figure by them, is a great obstacle to their application in practice. On account of this unwieldiness the Admiralty Manual is frequently compelled to neglect certain quantities, for instance to assume A and E to be zero, thereby destroying the exactness of results, leading into a maze of errors.

By treating the two parts of the deviation separately, as shown above, it does not matter how large the coefficients A and E may be, their effect is absorbed once for all in the constant quadrantal deviation; and as all changes pertain to the semi-circular deviation, the change in the deviation total is always found to a nicety without neglecting any of the coefficients.

Nearly of as much importance as the division of the deviations into their constituent parts, is in practice the analysis of the force producing semi-circular deviation into its components and their direction. The Admiralty Manual gives no solution of the problem, but confines itself to vague assertions in a cursory note; all of which proves the Admiralty Manual to be sadly behind the times.

The application of the theory of magnetic forces in practice, requires a compass perfect in every respect, like a chronometer keeping its rate; a compass showing correct deviations no matter what the position of the disturbing force may be; a compass showing the same deviations as an imaginary needle of no length, a needle for which the paractical angle is nearly zero; in other words, a compass in which the sine of the deviation divided by the sine of the compass course of the disturbing permanent pole, is the same constant quantity for all courses. This property of a compass depends on the arrangement of its needles, which is perfect only in a few types, the great majority being defective.

To the defects of compasses, and the lack of practical formulæ and methods, insuring exact results, may be attributed many abortive attempts at finding the magnetic forces of a vessel at sea, and the disfavor many of the teachings of the Admiralty Manual meet with in practice.

Chicago, Ill.

JOHN MAURICE,
Civil Engineer and Nautical Expert.

CAPTAINS EXONERATED.

The jury in the inquest into the Northfield-Mauch Chunk ferryboat disaster in New York harbor, in which several lives were lost, returned a verdict on Monday exonerating Capt. Johnson of the Northfield and censuring Capt. Sylvester C. Griffin of the Mauch Chunk.

Capt. Griffin is not held to have been criminally negligent, however. The jury reported Capt. Johnson and the Northfield had the right of way and recommends legislation be enacted fixing rules for the governing of ferryboats.

A CHICAGO DRAINAGE CANAL ECHO.

The Illinois Supreme Court has decided that the drainage district of Chicago is not required to continue pumping water into the Illinois and Michigan canal. This gives the American Elevator and Grain Trade the reason to say that, Chicago having filled up the canal between Bridgeport and Lockport with its sewage sludge and having assumed the canal has no longer any commercial value to herself, and having attained also the benefits sought by executing the contract, has chosen to repudiate a contract made December 21, 1899, to forever keep the water in the canal at the navigable depth of six feet. Since, to paraphrase Burke, one can't indict a city of bad faith, there is nothing to be said in the premises, especially since it is not allowable to swear at the Supreme Court.

The canal commissioners, having fortunately been provided with an emergency fund by the legislature, announce that the pumps will be kept running by the commission. The money at their command is enough to keep the canal open for this and the next season. But what of the thereafter? If the present commissioners shall manage the canal's affairs no better than did their predecessors, the canal will have to go begging again from the legislature of 1902.

Meantime, the boatmen are not helping matters by elevating their rates. And the recent sale, too, of the entire line of boats of the largest firm operating on the canal to a competing railway, it is supposed, further complicates the situation.

THE IRRATE CUSTOMER.—"Look here, I bought this hair tonic from you, and it's absolutely worthless." "We can't help that, sir." "But you guarantee each bottle." "Yes, sir, each bottle—but we didn't guarantee the tonic."

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Liability of Charterer or Owner for Collision.—Liability for damage caused by negligence of the officers and crew of a vessel, who are appointed and paid by charterers, is not, as between the charterers and the owners, imposed upon the owners by a clause of the charter party requiring the owners to "pay for the insurance on the vessel." The Barnstable, 21 Sup. Ct. Rep. (U. S.) 684.

Construction of Charter—Length of Term.—A charter of a steamer for a wrecking expedition limited the term to "about six weeks," which was the time the charterer estimated would be required. Held, that such charter could not be construed as one for such time as might be required to complete the enterprise, or to entitle the charterer to retain the vessel for a longer term than eight weeks. The Helios, 108 Fed. Rep. (U. S.) 279.

Marine Insurance—Fraud—Conspiracy.—A new trial in an action on a valued policy was properly granted on the ground that the verdict was excessive where the effect of a charge excepted to by plaintiff, but given without defendant's fault, took from the jury the question as to the quantity and value of goods actually put on board a ship in determining the amount that plaintiff, an innocent transferee of the bills of lading, was entitled to recover, there being evidence that the consignor was a party to a conspiracy to defraud the insurers, and that a large part of the goods described in the bills of lading had not been shipped. Voisin vs. Commercial Mut. Ins. Co., 70 N. Y. Supp. 147.

Transshipment by Through Carrier—Liability of Second Carrier.—The general course of business in forwarding when the ship of the signer of a through bill of lading does not go all the way to the port of ultimate destination, of which fact the shipper has knowledge, or is given notice by the through bill of lading, and the manifest necessity of transshipment by the through undertaker under such contract as it can reasonably make, justified the presumption of its authority to make such contract, and to bind the shipper thereby, although the terms of the new contract may not be in all respects the same as its own; but, in any event, the undertaking and liability of the second carrier are measured by its own contract, provided its terms are reasonable and not in contravention of the maritime law. The St. Hubert, 107 Fed. Rep. (U. S.) 727.

Collision—Tow and Grounded Brig—Mutual Fault of Brig and Tug.—A brig which had gone ashore in the Narrows was suddenly floated by the action of the wind, her sails having been trimmed with that object, and, going astern with the rising tide without any means of control, came in collision with a scow which was passing in tow of a tug, about fifty feet distant. The captain of the brig was the only person on deck at the time, no precaution had been taken to control her when she should come off, and no signal of danger was given to the approaching tug, nor was any attempt made to control her until too late to avert the collision. On the other hand, a proper lookout on the tug could have seen the brig, and understood her situation, and the tug could easily have passed at a safe distance. Held, that both vessels were in fault for the collision, and liable for the injury to the scow. The F. W. Vosburgh, 107 Fed. Rep. (U. S.) 539.

Maritime Liens—Charter Provisions—Lien of Owner on Cargo for Charter Money.—A provision in a time charter, which leased the ship for the term, and made the charterer owner for the voyages made thereunder, reserving to the owner "a lien upon all cargoes and all subfreight for charter money due under this charter," cannot be construed to give the owner a lien upon cargo owned by third persons, and shipped under contract with the charterer, for charter money due! nor has he any lien on such cargo, under either the charter or the maritime law, to compel the shipper to pay the freight to him, such lien being created by the maritime law in favor of the person in possession of the ship. The only effect of such provision purporting to give the owner a lien upon cargo is to bind such cargo as is owned by the charterer to the extent of the charter money due. American Steel-Barge Co. vs. Cargo of Coal ex The City of Everett, 107 Fed. Rep. (U. S.) 964.

Collision—Recovery of Damages—Right to Enforce Contribution.—The rule of the common law that no contribution can be enforced between tortfeasors is not the rule in admiralty as between two vessels, each of which was in fault for a collision by which a third party sustains damage, but, on the contrary, the right of each to require the other to bear an equitable proportion of the loss has always been enforced as a substantial legal right, and it was in recognition of such right that admiralty rule 59 was promulgated, giving the owner of a vessel proceeded against the right to implead any other vessel contributing to the same collision, to enable the court to enter such decree "as to law and justice shall appertain." But, where the other vessel cannot be brought in because not within the jurisdiction, such accidental fact cannot change the legal right of the libeled vessel, and, where she is compelled to pay the entire damage, she is subrogated to the rights of the original damage claimant, and may bring an independent suit against the other to establish the latter's liability also, and enforce contribution. The Mariska, 107 Fed. Rep. (U. S.) 989.



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CLEVELAND, O., JULY 18, 1901.

EXPORTING pig iron and importing steel rails are among the latest Canadian departures.

CROSSING the Atlantic in ballast for a cargo of deals at Montreal is now the dollar-seeking employment of foreign tramp steamers.

NOTWITHSTANDING the strike of the iron and steel workers, contracts have been placed this week for two steel steamers for next season's delivery.

EVEN the Bureau of Statistics, Treasury Department, appears to desire to perpetuate the wrong use of the word freight. The Bureau quotes coastwise and off-shore freight in currency, and lake freights in commodities.

IT appears that the British admeasurement of vessels is not always accepted in the United States. From the report of a Treasury decision contained in the current issue of the RECORD, the Commissioner of Navigation will take up the case of the Atlantic, White Star Liner, Bovic, and exact all of the tonnage tax that is due, owing to finding an increase of measurement, if such a view can be upheld. It is the old query of what should be "closed in spaces" and what cannot be so considered.

THE Lusitania recently wrecked near Cape Race, Newfoundland, passed the Northwestern, now at Chicago, when in that vicinity. Messrs. Elder, Dempster & Co., in appreciation of the gallantry displayed by the crew of the Lusitania in saving life, presented each one with a month's pay. One of the masters in this line, Capt. G. C. Evans, late of the Lake Superior and now in the Lake Ontario, is already the recipient of well-earned honors for gallantry and heroic conduct in saving life at sea.

THE hegira of lake-built vessels to the coast that set in a few seasons ago is now fully exploded and they keep trailing back to the trade they were built for. This week four barges managed in Cleveland repented of their exodus and they now again lap fresh water, or vice versa. Novices in ownership were egged on by the publication of stories of the money to be earned by keeping lake vessels at work on the coast all winter instead of laying up for at least one-third of the year, as is demanded in lake service. The cupidity of dollar grabbers being once aroused, a very questionable fleet of wooden boats were chased away to sail where only the most seaworthy sort of craft can make a moderate living. The result was inevitable, the conclusion a foregone one, and the rattletreaps are now back.

In speaking of the ownership of British shipping and the wrongs they labor under, Mr. Bellamy, an English ship-owner, argues from the standpoint that has been worked so threadbare on this side of the Atlantic; he says: "The foreign shipowners possess certain advantages, but above all they score in wages, which are about a third less than what our shipowners pay; food costs proportionately less, the aid given by bounties granted by their government is in their favor, and that foreign shipowners are not taxed by light dues. Proceeding to deal with the question of legislation, Mr. Bellamy repeats the fact that the foreign shipowner can send his ship to an English port with 10 per cent. more cargo than is allowed the British owner. Furthermore, that the industry which has \$750,000,000 invested and which pays out in wages alone \$50,000,000 per year is, or ought to be, important enough to command specially favorable legislation instead of the contrary, as now prevails.

It may be all well enough to float the bonds of the Northwestern Steamship Co., guaranteeing six per cent. interest, but it looks to be a very problematical investment. In so far as Capt. Atkinson's quoted guarantee that he can make the voyage in 49 days is concerned, it is simply claptrap, when it has taken him practically three months over the present one. No one can gauge the length of the round trip per lakes, canals, rivers and Atlantic, and back over the same route, within several days, and if Atkinson stated one day below the fifty as quoted, he is not a careful man in his talk. The economical type of carrying craft for this trade has yet to be discovered. Canallers make but indifferent Western Ocean droguers, nor are 3,000-ton boats considered adequate carriers in the lake trade even when carrying their full cargoes to a port of discharge.

THE present attitude of the steel trade is deplorable from every view. We look for the wind that at least blows somebody good, but find the immediate future prospects almost a dead beat. The lift to windward which lake transportation circles may experience will be in the more active shipments of coal, lumber and grain, and yet, even this situation had been figured on ahead. The ramifications engendered and affected by a continued struggle between the almighty steel corporation and its employes is impossible of enumeration in its bearings from an international, national, or individual standpoint.

NOW we have a jury of New York citizens censuring the U. S. Steamboat Inspection Service and asking or recommending that legislation be enacted fixing rules for the governing of ferryboats. The MARINE RECORD is almost alone in waging war on the general incompetency of that branch of the Treasury Department known as the Steamboat Inspection Service, and, while it will take time to bring about desired results, we continue to hope for a complete reconstruction of that important arm of the Federal service.

PROF. MOORE—WEATHER FORECASTS.

Prof. William L. Moore, the scientific head of the Weather Bureau, is not chafing under the criticisms made upon him by the New York newspapers and other uninformed assailants of his professional integrity. The great weather expert smiles sadly and says: "They charge me with predicting weather one month ahead. They might as well have charged that I made forecasts for the year 3,000. Newspapers have got into the habit of jesting with the official meteorologists, but if any editor comes to me I'll guarantee to interest him seriously in the science." In other words, Mr. Moore denies flatly the assertions of his critics that he is a quack.

He has been chief of the bureau since 1895, and his record is a wonderful one. His famous record as a forecaster in Chicago will readily be recalled by the people of that city. During his work there he never made one serious error. It was that work, in connection with one of the most rigid competitive examinations ever known in the service, which won him his promotion. The great meteorologist was born at Binghamton, N. Y., in 1856. He learned the trade of printer and worked at "the case" until he entered the government service. He was always an amateur of meteorology and he rapidly went to the front.

THE death of Capt. Commodore Perry Hagedon at an advanced age is announced from Harbor Springs, Mich. Decedent had spent fully half a century on the lakes. He had also been a Free Mason fully as long.

ST. LAWRENCE NAVIGATION—THE COMPI-
LATION OF A WRECK CHART TO BE
UNDERTAKEN.

The MARINE RECORD July 11th contained the following brief editorial notes:

"The Dominion Government would do well in compiling a wreck chart showing the location where wrecks had taken place, sail and steam, during the past several years. After that they should place the best possible aids to navigation in the vicinity, according to the number, grade and importance of the losses. This procedure is indispensable in connection with the piloting and navigational improvements desired in the Gulf of St. Lawrence."

"Another wreck has piled up on the Newfoundland coast nearly alongside the Lusitania. It is quite possible and even probable, that the island government has not the wherewith to build, equip and keep in constant use the light-houses, fog signals and other aids to navigation so essential for the safety of life and property waterborne around its coast line. The Imperial government should assist in the up-keep of its financially weak and distant possession, at least, and in so far as to relieve it from the stigma of being a menace to the traffic carried on with and by the Dominion of Canada."

It is now learned that steps are being taken by Minister Murphy, Chief of the Department of Marine and Fisheries, of Newfoundland, to demonstrate the absolute necessity of the establishment of the Marconi system of wireless telegraphy to safeguard life and property embarked upon ocean steamers from the dangers of Cape Race and the adjacent coast.

With this end in view, Minister Murphy has had a map prepared from the official records, giving the location of the wrecks which have occurred at and around Cape Race for the last 40 years.

Even the most experienced seamanship and the most modern instruments of navigation are not proof against the fogs and currents of Cape Race. These strong and erratic currents shift and change with wind and tide in a manner to baffle even men who have lived all their lives on the coast.

It was shown conclusively in the inquiry in the case of the Lusitania, that she would have been saved had the Marconi system, which is affected neither by fogs nor storms, been in operation. The unknown and probably temporary current which swept her out of her course brought two other steamers to exactly the same point within 24 hours after she struck.

Through the Marconi system warning would have been given while the vessels were still miles from the coast. Its establishment would also prevent the frightful losses of life and property which have occurred off the banks in foggy weather.

In the matter of the wreck chart it is gratifying to note that Minister Murphy, of the New Foundland Marine and Fisheries was at work on the delineation at the moment of the RECORD's suggestion. Of course a wreck chart might have been compiled at any time during the past few decades but it will be of all the more assistance in establishing permanent and adequate aids to navigation when the official chart will show the location of wrecks with attendant data, for the past forty years.

LAUNCH OF THE IROQUOIS.

The steel steamer Iroquois was successfully launched from the yards of the Craig Ship Building Co., Toledo, O., on Monday, the christening ceremony being performed by Mrs. George T. Arnold.

The Iroquois is a steel passenger steamer 220 feet over all, 34 feet beam, and 13 feet depth of hold, and will have a speed of 19 statute miles an hour.

She is built for the Arnold Transportation Co., and will run between Mackinac and the "Soo." Mr. and Mrs. Geo. T. Arnold and Miss Breckinridge, of Minneapolis, and Mr. Geo. Kemp, of the "Soo," members of the firm, witnessed the launching.

The other boats to be launched by the Craigs in the near future are two big freighters, one of which will be ready to go into the water some time next month, and the other a little later.

The Lakeside, another handsome little steamer, was launched last week. Her dimensions are 132 feet over all, 29 feet beam and 12 feet depth of hold. Engines, triple expansion, cylinders 20 x 40 x 24 inches. The machinists strike rather delayed work at the yards for a time, but everything is going along in proper order again and inquiries are being made regarding figures for more new tonnage

A PERMANENT LIGHTSHIP.

A steel lightship, embodying in its design some features of a novel description, and probably constituting the prototype of similar vessels which will have a revolutionary influence on this class of production, was launched last month from the yards of the Clyde Shipbuilding and Engineering Co., Ltd., Port Glasgow, Scotland. Messrs. Pintsch, of London, the well-known lighting engineers, by whom, in conjunction with D. and C. Stevenson and the builders, the design has been elaborated, have adopted their compound gas system in order to do away with the necessity for the maintenance of a crew on board the vessel, which is to be stationed off the West Coast of Scotland, at the Otter Rock, near Islay, where it will be subjected to a great stress of weather. The hull is built of steel of extra strength, with fin and web keels, three feet in depth, which, taken along with the extreme beam of the vessel, should reduce rolling to a minimum. Two steel water-tight bulkheads are fitted, dividing the vessel into three water-tight compartments. In the centre division are placed two large welded steel gasholders, which have capacity for enough gas at pressure to last the vessel for several months. At the top of a circular tower or mast is placed the lantern, at a height of 25 ft. from the water level. Communication is effected through the mast, up which the gas connections are also carried. To guard against fog a large bell is hung in a belfry attached to the deck of the vessel, and by a special arrangement the gas passing from holders to lantern is made to actuate a clapper which rings the bell automatically, an ordinary tongue being also provided and actuated by the roll of the vessel. As a result of these special features, the lightship, on being moored at her station, will be independent of outside attention for a considerable period of time, and has everything on board to render it a self-acting lightship and bell buoy.

TO STOP A CONSOLIDATION.

A hearing took place in the United States Court at Hartford Conn., on Tuesday, before Judge Shipman, on a motion to show cause why the directors of the Consolidated Lake Superior Co. should not be enjoined from purchasing certain transportation, mining and lumber properties, it being contended that some of the directors of the consolidated company had acquired the right to these properties in the name of the Ontario-Lake Superior Co. and wished to dispose of them at exorbitant prices to the plaintiff, Allen S. Miller, of New York.

The plaintiff alleges that the price to be paid for the stock by the consolidated company will result in a profit to the stockholders of the Ontario Lake Superior Co. of more than \$9,000,000, a great part of which will be received personally by the directors of the consolidated company.

In the brief filed by the defendants in behalf of the Consolidated Lake Superior Co. and the Ontario-Lake Superior Co., the allegation of fraud charged in the complaint is denied.

LAKE FREIGHTS

Lake freights are just where they stood last week and for some time previous. Ore is being sent forward as fast as it can be handled at receiving ports. Bituminous coal is now shipped more lively than at any time during the season, and at former rates, 40 cents to Lake Michigan and 35 cents Lake Superior. Buffalo shipments very light. Lumber shippers still quote \$2.25 per M. feet from Lake Superior, with vessels holding for the 25 cents advance and changing ports in some cases rather than accept the lower rate. Grain rates are almost nominal, 1½ cents on wheat Chicago to Buffalo, and 1½ cents to Georgian Bay. Corn ½ cent less, with light shipments, and vessels going for iron ore. Three cents is offered on Duluth wheat, October loading.

WORK has been started on the Lake Washington Canal, at Seattle, Wash. This canal is to connect the Puget Sound with Lake Washington, a body of fresh water about 16 miles long and one mile wide, running parallel with the sound and about four miles distant. The canal, which is to be built with appropriations from the general government, will follow up a small stream running out of Lake Union, a branch of Lake Washington. At present a dredger and about 40 men are at work on a contract covering 6000 ft. of canal, from the entrance at Shilshole bay to a point where a lock is to be constructed. The level of the lake is about 14 ft. higher than mean tide in Puget Sound.

LETTERS AT DETROIT MARINE POST OFFICE

JULY 17, 1901.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Applin Willard, Ward	Maxwell Geo. L.
Anderson Mat, J. I. Case	Mercer J.
Birmingham Jas., America	May Jno. D., Richards
Brooks Henry	Moore Chas.
Bullock James	McCarthy E. C., Sauber
Black L. C.	McIntyre Alex., 2 Alcona
Beck Wm.	McDonald Angus
Boger Frank, Ishpeming	McGuffin Fred
Cronk Art, A. P. Grover	McDargh Geo., Stephenson
Chamberlain G. M., 2 McDou-McKenzie James, Republic	Navarre B. J., Stephenson
Clegg Harry, Curry	Pro A.
Cahoon Frank D., Lewity	Pletcher C. L., 3 Yuma
Currie Wm., Yukon	Parr G. Ball
Cain Fred	Powers Capt. W.
Cape Richd., E. Hutchinson	Seipes Wm.
Davis Fred, Sevona	Savan Jno., Wade
DeLaney Sanford, Curry	Stanley Chas. L., Hoyt
Davis Chas.	Storms Oscar
Dorrance O. A.	Stark Mrs. Otto
Dandron Alex.	Shank Jno., Abyssinia
Dillon Roy	Shirley Robt. W.
Francony Philip	Simmons Lee
Girard Frank	Titus Lewis C. 126
Glendon Thos., Page	Turner Duncan, 2 Capt. Wil-
Howard Ed., St. Paul	Turner Archie, " (son
Howard Peter J., 2 Columbia	Tiffany Capt. B.
Hunt Nellie	Vorlath Walter
Harris Matt	Winters Geo. H., H. H. Brown
Henricks Peter	Wright Fred, A. P. Grover
Hickey Danl.	Williams Jno. E., 2 Hesper
Henderson Robt.	Woods Joe J., Amazon
Heldt Aug., Gates	Wallace Arthur P.
Jackson Chas., 2 Sacramento	Wallace Arthur
Jones E. J., Princeton	Wass Ben, Sailor Boy
Knox Wm., Grecian	Yeger Danl. H., Northern King
Lanis Ed.	F. B. DICKERSON, P. M.

REPORTED BY THE LOOKOUT.

So much shipping is being done here these days, that the vessels have difficulty getting crews promptly. There is room for a lot of husky young fellows who don't mind work. The vessel owners want farmer boys. They are used to work and don't get drunk every time they draw their pay and then forget to re-ship. More men are wanted who can be depended upon to be on hand when the boat is ready to clear. Vesselmen say too that farmer boys make the best material for sailors. The jobs pay \$40 a month and board.—Daily Post-Herald, Conneaut, O.

In connection with the wreck of the Elder-Dempster liner Lusitania, in the Gulf of St. Lawrence, while bound to Quebec, Mr. A. L. Jones, head of the firm, has shown his sense of appreciation of the gallantry of the captain, officers and crew of the vessel in saving the lives of the large number of passengers on board by presenting each of them with a month's salary. There is also a proposal in favor of some public recognition of the splendid manner in which the captain, officers and crew of the Lusitania saved the lives of the passengers of the ill-fated vessel.

A cable to La Presse, Quebec, from Paris, says: "Colonel McNaught, of the Great Northern Railway Co., of Quebec, is here, and has taken the first steps toward putting into execution that company's plans for a winter service between Quebec and Europe. The Colonel will go to Fontainebleau in a day or two, where he will interview Mr. Baby, an expert in ice-breaking steamers, after which he will proceed to England and look over the shipyards, the Colonel's intention being to construct several steamers like the Ermack. It is claimed that Sir William Laurier and Mr. Tarte gave Colonel McNaught a good deal of encouragement before he left Canada on this mission.

Capt. N. W. Kirtland died at Sturgeon Bay last week. He was born in Connecticut and had reached the age of seventy-six years. Decedent was among the early captains in the Goodrich Transportation Co.'s employ. He commanded the steamer F. W. Backus in 1866 and later the steamer Ottawa. After remaining in the company's service until along in the 70's he purchased a small schooner and went into the coastwise trade on Green Bay. In this business he remained until old age compelled him to retire a few years ago. His death was caused by a combination of ailments, due to advanced years. Capt. Kirtland was married in 1872 to Miss Effie McKinley, a first cousin of President McKinley, who with an only son survive him.

BUFFALO.

Special Correspondence to The Marine Record.

The large steamyacht Roco is now on her way to the lakes via the St. Lawrence river. The owner and a party of his friends intend cruising on the upper lakes.

The tug Owen, which has been under charter by the Donnelly Contracting Co. for work in Buffalo harbor, has completed her services and gone to Detroit. She is owned at that port.

Talking about large-sized steamers it was remarked that the new vessel of the White Star Line, the Celtic, has a load draught of thirty-six feet six inches, and the tendency is evidently in the direction of larger-sized vessels with corresponding draught.

The excursion steamer Puritan, belonging to the Crystal Beach line, took fire at her dock this week, the damage amounting to about \$10,000. The boat is valued at \$30,000. Another steamer will be chartered to take her place in the excursion trade while she is undergoing repairs.

The Buffalo lumbermen are about to take up the stevedore question at last. Handling rates are so much higher than at other lake points that it is not easy to do business with the barges. A new stevedore committee has been appointed and the wage question will be taken up with the men.

A Tonawanda gang of lumber shovels discharged the steamer Ketchum this week and made 67 cents an hour at work which Buffalo men previously lost money on. The Buffalo Lumber Exchange is asking President Keefe, of the longshoremen, for relief, and the members are preparing to fight if they don't get it.

The four round trips which the Chicago boats are said to be able to make each season, across the Atlantic, is probably meant for four passages or two voyages. As the two trips will consume six months, and St. Lawrence navigation after November is extra hazardous. The Northwestern left here Saturday night with a 1,300-ton cargo of borax, having previously discharged her foreign cargo at Sydney and Montreal.

"The time is coming, and it won't be so very long delayed," said a man who has been in the coal business in Buffalo for many years, "when the railroads will carry all the coal to the trade at all points they can reach. The Lehigh and all other roads are carrying more coal into Canada and even to Chicago, than ever before. The amount will be constantly increased and the lake shipments will be correspondingly decreased."

With three naval vessels in port manned by naval reserves, Buffalo harbor had the appearance of a naval station on Tuesday. Assistant Secretary of the Navy Hackett, assisted by Capt. Schultz, of the Navy, inspected the fleet and the crews, having come from Washington for that purpose. The Yantic, Detroit's drill ship sailed for Duluth, directly after inspection, bearing Governor Bliss, of Michigan, and his staff. The Michigan and Hawk will remain in port for several days.

A trial trip was held this week of the tug Major Kingman, named after Major Kingman, Corps of Engineers, U. S. A., now stationed at Cleveland. She is the property of the Donnelly Contracting Co. and was designed by Thomas O'Grady and built by Benjamin L. Towles of this city. She will be a part of a fleet of tugs carrying in tow stone from Buffalo to the breakwater, being built at Ashtabula. She has a license to carry twenty passengers. Her dimensions are, 73 feet over all, 17 feet 6 inches beam, 7 feet 6 inches draft. Her engines are fore and aft compound condensing. She is fitted with a steam reversing gear and a return tubular marine boiler. She is allowed to carry 175 pounds of steam.

The Yantic, the practice ship of the Michigan Naval Reserve, which left here on Monday night for Detroit, via Cleveland, was in service in the North Atlantic and South Atlantic fleets in the old navy. She was launched in 1863 and figured in the blockade off Fort Fisher and the battle of Port Royal. The Michigan has been in commission for thirty-three years and has been on the Great Lakes all this time, being one of the first iron ships to be constructed. She is an old-fashioned side-wheeler, equipped with four 6-pounders, two 1-pounders and two Gatling guns. The Hawk was built on the Clyde in Scotland and was a private yacht at the time the Spanish-American war broke out, when she was purchased by the government, and used as a dispatch boat about Cuba. She is a well-appointed craft, and is the practice ship of the Cleveland battalion of the Ohio Naval Reserve. The Toledo Naval Reserve has no ship but drill with the Clevelanders. About 60 men are aboard the Hawk.



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WHY TRUSCOTT BOATS EXCEL.

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TREASURY DECISIONS.

MEASUREMENT OF VESSELS.

Exemption of sheltered spaces on upper deck for transportation of cattle and deck cargo from measurement and tonnage tax.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., July 2, 1901.

SIR: The Bureau has received your report of March 16 on the application, dated March 7, from F. Ridgway in behalf of the White Star Line, for a refund of tonnage tax exacted in the case of the steamship *Bovic*.

The report of the surveyor, which you transmit, states:

The upper between deck, called by the British "shelter deck," is a fully built deck to the hull, the frames of the vessel being carried to the deck above. The sides are plated with steel and are furnished with side lights. This deck has hatches situated forward, amidships, and aft, which may or may not be closed.

Decks of this character are fitted for the carrying of cattle, though cargo, such as railroad iron, cylinder oil in barrels, scrap tin, etc., has been found stowed therein for the voyage from this country. Upon the return trip, merchandise of such various kinds as analin colors in barrels, casks of vinegar, caustic soda in drums, matches in cases, etc., is frequently stowed and carried in this space.

Article 85 of the Customs Regulations of 1899, quoted in the above-mentioned letter of protest, provides as follows:

By "closed-in spaces" is to be understood spaces which are sheltered from the action of the sea and weather, even though openings be left in the inclosure. Measuring officers will exercise due vigilance that the intent of the law in this respect is not evaded.

It should be borne in mind, however, that no closed-in spaces above the upper deck to the hull are to be admeasured unless available for cargo or stores or the berthing or accommodation of passengers or crew.

The cattle deck of the steamship *Bovic* is clearly a closed-in space available for cargo or stores, although openings may be left in the inclosure, and is, furthermore, not above the upper deck to the hull. It was, therefore, admeasured and added to the tonnage expressed in her register, as an omission not authorized by the admeasurement law of the United States, the course prescribed by article 88 of the Customs Regulations of 1899.

Article 85 of the Customs Regulations of 1899, to which the surveyor and applicant refer, is transcribed from the Customs Regulations of 1891, and relates principally to the following provision of the act of May 6, 1864:

If there be a break, a poop, or any other closed-in space on the upper decks, or on the spar deck, available for cargo, or stores, or for the berthing or accommodation of passengers or crew, the tonnage of such space shall be ascertained as follows, etc.:

Your attention is invited, however, to the provision of the act of March 2, 1895, modifying the act of 1864 as follows:

Provided, That nothing shall be added to the gross tonnage for any sheltered space above the upper deck, which is under cover and open to the weather; that is, not inclosed.

One of the purposes of this amendment of 1895 to the act of 1864 was to provide a rule for the measurement of spaces under a shelter deck, resulting from recent changes in the methods of constructing vessels, and to secure uniformity in this respect between American and British methods of measurement.

Whether for the purpose of measurement a deck is to be regarded as an upper deck or as the shelter to an upper deck is to be determined in each instance both by the character and structural conditions of the erection, and by the purpose to which the between deck is devoted. Differences in construction are so numerous that no definition or rule on this subject has been formulated. If the deck is a continuous deck, fastened down and water-tight, sealing up the cylinder formed between the two decks, and making it a fit place for the stowage of cargo, like a hold, the deck is to be treated as an upper deck and the space between it and the deck below is to be measured.

If, however, the cylinder is open to the shipment of seas, and the space is not reasonably fit for the carrying of dry cargo, but is used only for cargo generally classed as deck cargo, such as cattle, horses, chemicals, oil in barrels, etc., then, usually, the deck is to be regarded as a shelter deck, and the space as "sheltered space above the upper deck which is under cover and open to the weather; that is, not inclosed."

You will please report to this Bureau upon each vessel entering your port on which exemption for such spaces under the provision of the act of 1895 referred to, has been granted or claimed, transmitting a statement of the tonnage of the space, with a diagram and an explanation, particularly on the matters mentioned, and showing the character and size of any openings admitting the sea, and of scuppers for its egress, so that each exemption of such spaces may have proper consideration.

Upon receipt of such report in the case of the *Bovic*, suitable action will be taken. Respectfully,

E. T. CHAMBERLAIN, Commissioner.
COLLECTOR OF CUSTOMS, New York, N. Y.

FOREIGN-BUILT VESSELS RECORDED BY CONSULS.

Signal letters, but not official numbers, may be granted to a foreign-built vessel, the purchase of which by an American citizen is recorded by a consul.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., July 2, 1901.

SIR: Referring to your letter, dated May 17 last, transmitting an application by A. E. Knights for signal letters and official numbers for the foreign-built American-owned steam vessels Chi Yuen, Too Nan, Taishun, Poochi, and Kwang Chi, I have the honor to transmit herewith assignments of signal letters for the vessels. Official numbers can not be awarded under existing legislation.

You are requested to satisfy yourself that at the time the letters are delivered, the owner or owners of the vessels shall be citizens of the United States, and that they and the vessels are duly recorded, as provided for by the consular regulations.

Respectfully,
E. T. CHAMBERLAIN, Commissioner.
HON. JOHN GOODNOW, Consul-General, Shanghai, China.

DERELICT MERCHANDISE.

Where a vessel loses part of her cargo in American waters, on the voyage of importation, duty must be assessed only on the actual quantity imported in the vessel.—The portion lost overboard, if subsequently recovered in any American collection district, must be retained in customs custody until due entry or sale as unclaimed.

TREASURY DEPARTMENT, July 2, 1901.

SIR: The Department is in receipt of your letter dated the 17th ultimo, concerning a cargo of lumber consigned to the Edwin S. Hartwell Lumber Company, which arrived on May 29 last, and was entered for consumption at your port by the consignee under entry No. 11224.

It appears that the lumber was imported in the steam barge Joseph L. Hurd, of Milwaukee, which cleared from Parry Sound, Canada, on May 25, bound for your port; that the quantity entered was 699,573 feet, which was the amount shown by the ship's manifest, but that the lumber inspector's return shows but 377,676 feet, being 321,897 feet less than the manifested and entered quantity.

In explanation of the above deficiency, a marine protest was filed by the captain of the importing vessel, a certified copy of which was furnished your office, stating that the vessel experienced a heavy sea abreast of Little Point Au Sable, Mich., causing the steamer to roll badly, which resulted in the loss of part of her deck load.

In view of the fact that the vessel was in American waters when the alleged loss occurred, you submit the matter to the Department for a decision as to whether, in the liquidation of the entry, allowance should be made for the difference between the entered and returned quantity.

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from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

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THE SAFETY CAR HEATING AND LIGHTING CO.
160 Broadway, New York City.

In reply, I have to inform you that duty should only be assessed upon the actual quantity imported, as evidenced by the inspector's return. The balance of the cargo originally shipped and lost overboard, as aforesaid, if recovered in any American port or collection district, will be taken possession of by the collector of customs of such district and retained in customs custody until due entry or sale as unclaimed.

In this regard, I have to advise you that the Department is in receipt of a letter from the collector of customs at Grand Haven, Mich., dated the 8th ultimo, in which he states that a certain quantity of lumber, amounting to 150,000 or 200,000 feet, presumably a part of the cargo of the Joseph L. Hurd, has been saved and brought into his port by various fishing vessels.

A copy of this letter has this day been transmitted to the collector of customs at Grand Haven for his information and guidance. Respectfully,

O. L. SPAULDING, Acting Secretary.

COLLECTOR OF CUSTOMS, Chicago, Ill.

Additional regulation governing the anchorage of vessels at the port of Chicago.

TREASURY DEPARTMENT, July 6, 1901.

To yacht and vessel owners, masters and others:

The following additional rule to the regulations published July 9, 1896, for the anchorage and movement of vessels in the harbors of Chicago, is hereby promulgated:

4. No anchorage buoys shall be placed east of a line drawn south from the east end of the pier upon which the United States Life-Saving Station is located, or south of a line drawn east from Jackson street.

O. L. SPAULDING, Acting Secretary.

VISIBLE SUPPLY OF GRAIN.

As compiled for by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo.....	1,574,000	507,000	805,000	57,000	119,000
Chicago.....	3,526,000	6,143,000	1,567,000	106,000	1,000
Detroit.....	134,000	121,000	2,000	6,000	3,000
Duluth.....	2,399,000	2,227,000	1,097,000	83,000	42,000
Port William, Ont.....	986,000	.....	.....	.....	.....
Milwaukee.....	398,000	634,000	319,000	8,000	16,000
Port Arthur, Ont.....	104,000	.....	.....	.....	.....
Toledo.....	103,000	481,000	134,000	5,000	.....
Toronto.....	42,000	.....	1,000	.....	9,000
On Canals.....	208,000	9,000	341,000	95,000	.....
On Lakes.....	1,746,000	561,000	312,000	75,000	.....
On Miss. River.....	70,000	.....	.....	.....	.....
Grand Total.....	27,979,000	14,067,000	7,421,000	537,000	391,000
Corresponding Date, 1900.....	46,681,000	13,618,000	7,144,000	567,000	686,000
Increase for week.....	.....	.....	.....	28,000	.....
Decrease " "	1,709,000	405,000	1,777,000	.....	4,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

Shipping—Cargo—Damage—Seaworthiness.—The chain locker of a steamship, which extended from the bottom to the main deck, was not water-tight, and during a voyage across the North Atlantic in winter sea water entered through the chain pipes, and damaged sugar which was stowed next the locker, without dunnage properly laid to protect it against leakage. The ends of the pipes on the fore-castle deck had been stopped or covered at the beginning of the voyage, but not sufficiently to withstand the action of the seas which broke over such deck, although the weather was no worse than should reasonably have been anticipated at that season of the year. Held, that the ship was liable for the injury to the cargo. The Palmas, 108 Fed. Rep. (U. S.) 87.

IMPROVING THE STEAM ENGINE.

At the recent centennial anniversary of the Royal Technical High School at Charlottenburg, Professor E. Josse, head of the Mechanical Laboratory, described the results of his experiments with an original process for increasing the efficiency of steam engines by utilizing the heat of the exhaust steam for evaporating another liquid having a lower boiling point than water.

Although patented in 1899 by the inventors, Messrs. Behrend and Zimmermann, the process has only recently been matured and its application perfected by the employment of an auxiliary engine, which, utilizing the heat contained in the exhaust steam gains, it is claimed, as much as 56 per cent additional motive power without increasing the expenditure of fuel. After many experiments, the inventors chose sulphurous acid ($H_2 SO_3$), which is not only cheap and easily obtained, but has the further advantage of a viscous consistency and lubricates the inner working surfaces of the machinery without corroding them. Their demonstrations, although not practically conclusive, were so promising that Professor Josse, as a technical authority on the subject, took up the problem, and, after several months of highly satisfactory laboratory experiment, caused to be constructed and connected with an ordinary working steam engine of the compound type an additional condenser and auxiliary engine, the power of which could be exactly measured. The engine was an ordinary compound steam engine with a stroke of 500 millimetres (19.96 in.) and a speed of 41.5 revolutions per minute. From the low-pressure cylinder the exhaust steam passes into the surface condenser, which is called the "vaporizer." In this vaporizer or condenser, the cooling medium used instead of water, is liquid sulphurous acid ($H_2 SO_3$), which has a boiling point so low that it is immediately decomposed by the heat of the exhaust steam, whereby the sulphur dioxide (SO_2) is liberated, which passes over into the cylinder of the auxiliary engine, where its work is done as in an ordinary steam engine. The auxiliary cylinder has a diameter of 800 millimetres (11.81 in.) and a stroke of 500 millimetres, with a speed of 77 revolutions per minute. After passing through this cylinder, the sulphurous vapor enters the surface condenser, around the tubes of which cold water flows as in an ordinary steam plant. Here the sulphurous vapor is condensed to liquid and is forced by the pump back into the vaporizer, where it begins to cycle again, the same SO_2 being used over and over again, the first serving, as it were, as a boiler or steam generator for the auxiliary engine; and this boiler instead of being fired by coal, obtains all its heat from the exhaust of an ordinary steam engine, and, instead of converting water into steam, evaporates a liquid that is far more volatile, i. e., has a far lower boiling point.

In the long series of recorded tests with one of these plants the following results were attained: The steam engine is of the compound type, of good modern construction, and being given a steady load, developed 34 i.h.p., with a consumption of 8.6 kilograms (18.96 lb.) of steam per indicated horse-power hour. The auxiliary machine working with sulphurous vapor indicated 16 horse-power—that is, an increase of 56 per cent, and yielding, instead of 1 horse-power, 1.56 horse-power for the same steam consumption, and reducing the steam consumption from 8.6 kilograms to 5.5 kilograms (from 18.96 lb. to 12.13 lb.) per in-

dicated horse-power. The experiments showed in the average that for every 15 kilograms (33.169 lb.) of steam passing through the main engine, 1 horse-power could be gained in the auxiliary machine. Applied, therefore, to an ordinary single-cylinder steam engine, exhausting into the air at high temperature, the percentage of power saved by this new device would be very much higher than the economy reached in these experiments.

MARINE PATENTS.

Patents issued July 9, 1901. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cents each.

676,365. Means for electrically lighting lightships or other stationary vessels, J. H. Junge, Cuxhaven, Germany.

677,868. Ship's door, John A. Kessler, Philadelphia, Pa.

678,193. Propelling mechanism for vessels, Martin A. Peterson, Sioux City, Iowa.

678,228. Propeller-Governor, F. S. Cormier, Moncton, Canada.

678,273. Mooring Device, Emerson R. Newell, New York, N. Y.

678,275. Propeller, Wm. B. Pinkerton, Cottonplant, Ark.

678,290. Propelling mechanism for vessels, Albert J. Taplin, Vancouver, Canada.

677,446. Tackle-block, James H. Ervin, Cleveland, O., assignor to the Cleveland Block Co., same place.

677,581. Mechanism for transmitting the readings of ships' compasses to distant points.

677,604. Hatchway cover fastening, Henry I. Smith, Buffalo, N. Y., assignor of one-half to Charles P. Walsh, same place.

677,610. Unloading apparatus, Richard Thew, Lorain, O., assignor to the Thew Automatic Shovel Company, same place.

677,619. Anchor, Frederick Baldt, Sr., Chester, Pa.

677,718. Unloading apparatus, George E. Titcomb, Cleveland, O.

677,760. Life-boat, Benvenuto Gianese, Genoa, Italy.

677,839. Anchor, John N. Young, Alameda, Cal.

NOTICE TO MARINERS.

DOMINION OF CANADA.—ONTARIO.

IMPROVEMENT IN FOOTES DOCK.—INCREASE IN STRENGTH OF LIGHT.—The lantern with a pressed lens, from which a fixed white light has heretofore been shown at Footes dock, Algoma park, River St. Mary, above the Sault, has been replaced by a larger and stronger lantern, showing a fixed red light from a dioptric apparatus of the 7th order. In other respects the light is unchanged.

This notice affects Canadian list of lights and fog signals, 1901, No. 1410.

F. GOURDEAU,

Deputy Minister of Marine and Fisheries.

Department of Marine and Fisheries,

Ottawa, Canada, 3rd July, 1901.

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

Pilots, masters or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notices of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada.

A CANADIAN VIEW.

Mr. Tarte, the Canadian Minister of Public Works, in a recent address to the business men of Montreal, said that the Port Colborne works would be completed in two seasons, and that the government was about to commence important works at Georgian Bay and the French river. He said that as soon as the St. Lawrence route was made right Montreal would have dozens of elevators like Buffalo. This would be necessary when shippers began to transport by the St. Lawrence river a good portion of the 40,000,000 tons of freight tributary to the Great Lakes, and for which Montreal was the natural outlet.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting. The bearing may be taken when the Sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Date. Amplitude. Bearing P'ts. Bearing Comp.

July 18... E. 29° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

July 21... E. 28° N. = N. 5 1/2 E. = N. E. by E. 1/2 E.

July 24... E. 27° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Date. Amplitude. Bearing P'ts. Bearing Comp.

July 18... E. 30° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

July 21... E. 29° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

July 24... E. 28° N. = N. 5 1/2 E. = N. E. by E. 1/2 E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Date. Amplitude. Bearing P'ts. Bearing Comp.

July 18... E. 31° N. = N. 5 1/4 E. = N. E. by E. 1/4 E.

July 21... E. 30° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

July 24... E. 29° N. = N. 5 1/8 E. = N. E. by E. 3/8 E.

LAKE SUPERIOR, LAT. 48° N.

Date. Amplitude. Bearing P'ts. Bearing Comp.

July 18... E. 32° N. = N. 5 1/8 E. = N. E. by E. 1/8 E.

July 21... E. 32° N. = N. 5 1/8 E. = N. E. by E. 1/8 E.

July 24... E. 31° N. = N. 5 1/4 E. = N. E. by E. 1/4 E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

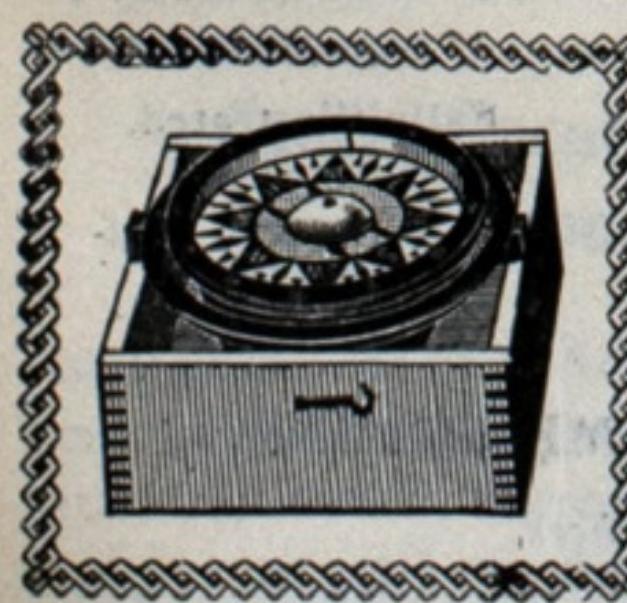
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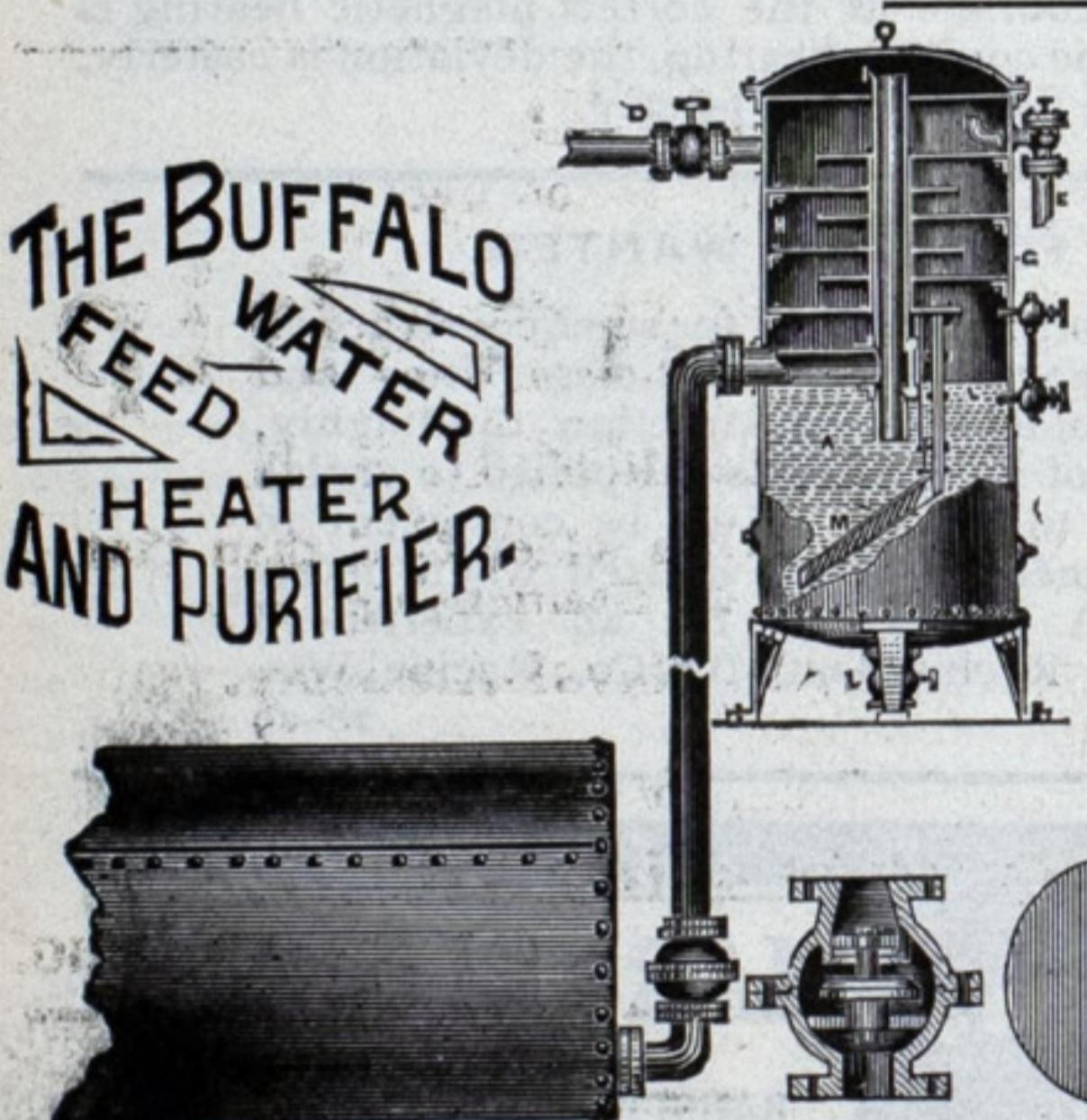
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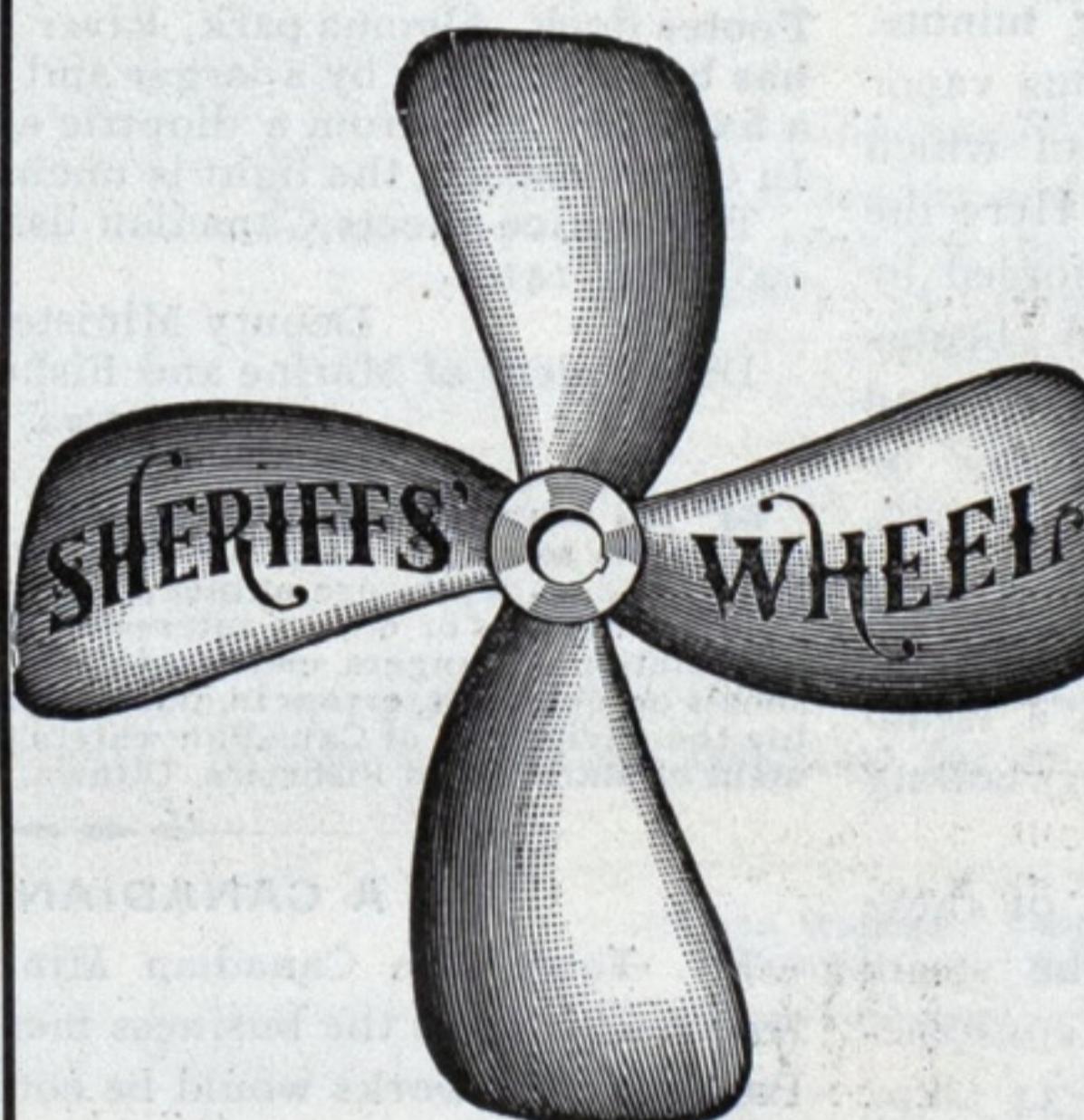
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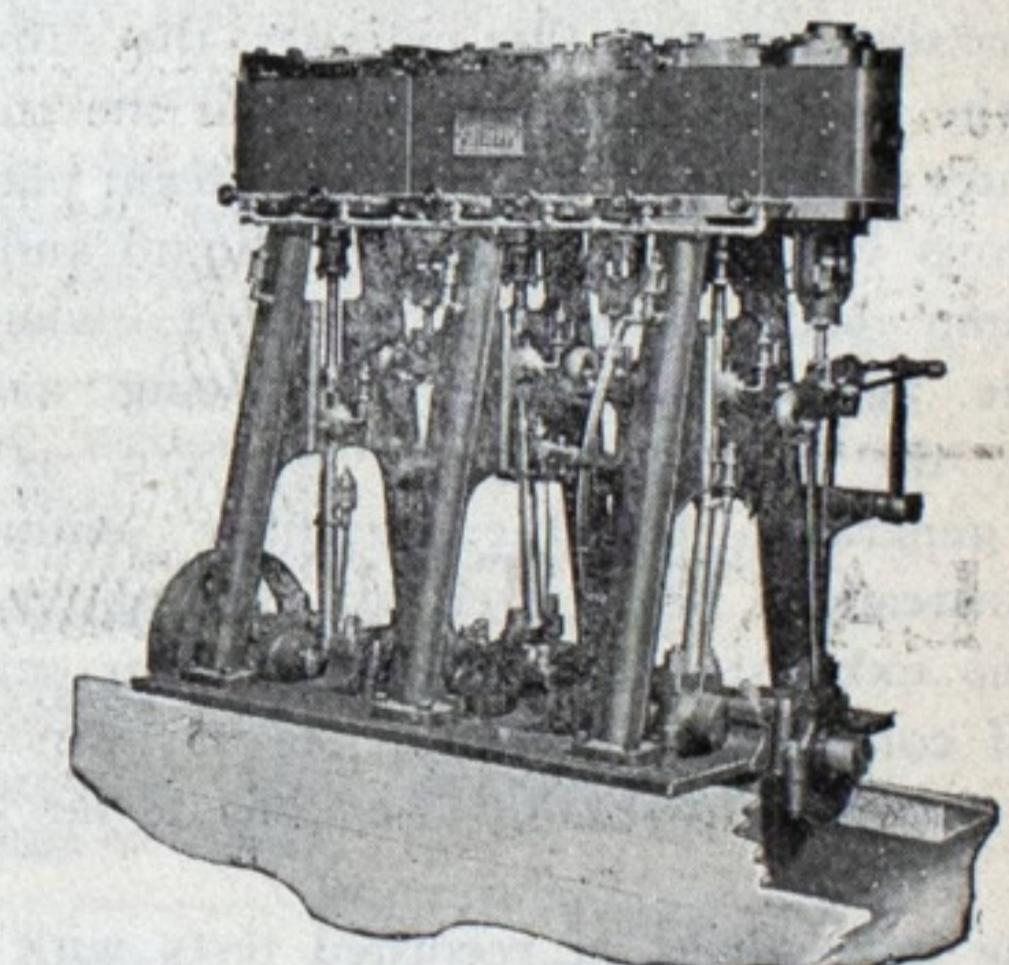
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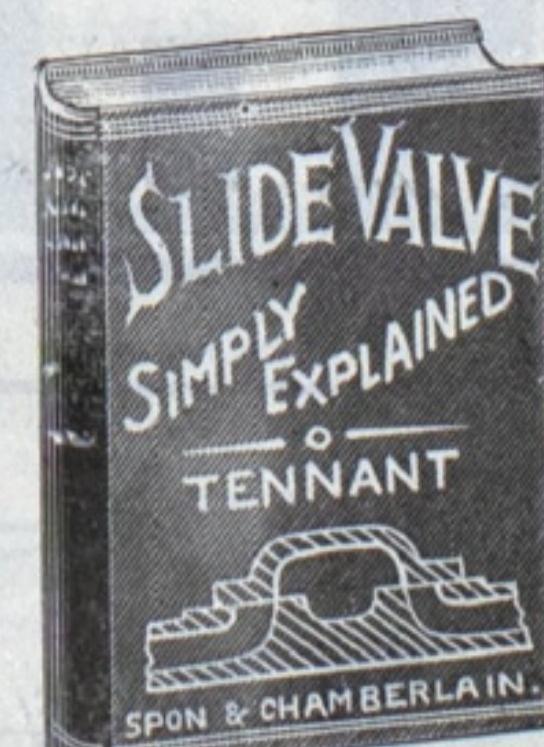
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106-30

RECORD OF THE LATE CREW OF THE GERMANIC.

Never in the annals of lake history have the bodies from any wreck been so closely watched for, identified and disposed of as those from the wrecked steamer Baltimore, which foundered off Oscoda, Mich., Lake Huron, during the Northeast gale which prevailed over the lakes on May 24. Out of a crew of 15 all told, two only were rescued. All bodies have been recovered with one exception.

The wreckage and bodies drifted in a southeasterly direction, towards East Tawas, thus verifying the surface drift as set forth in the current chart of the lakes, issued a few years ago from observations taken by the Weather Bureau.

Every credit is due Capt. H. C. Bristol, marine reporter, E. Tawas, for the unremitting attention which he has given towards the recovery of the bodies and their identification, etc., as well as in keeping the half-submerged wreck marked by day and night, though the cost of the lighting was, we understand, defrayed by P. H. Fleming & Co., Chicago, late owners of the craft. Captain Bristol furnishes the MARINE RECORD with the following particulars of the late crew under date of July 15:

1. Capt.—M. H. Place. Body found by Capt. De Land, of tug Genewach, in Lake Huron above Au Sable, taken to Sable, thence shipped to Cleveland.

2. Stewardess—Mrs. M. H. Place. Body found by Walter Scott on beach at Fish Point, taken to Sable and shipped to St. Clair.

3. Mate—M. Brethern. Body found at Wenona Beach, fast to wreckage. Shipped to St. Clair.

4. Engineer—Peter Marceau. Body found by fishermen on beach at Fish Point, about three hundred feet from where Mrs. Place was found. Mrs. Place, Capt. Place and Mr. Marceau were in the yawl when it capsized. Body taken to Au Sable, then to East Tawas, placed in casket and shipped to Chicago. Mr. King paid the fishermen a reward of \$10 for their services.

5. Wheelsman—C. W. Sears. Body found with life preserver on, by Joe Bowen, one of Bristol's patrolmen, at

fishery above Point Lookout. Identified by C. L. Judd, of Saginaw, a brother-in-law; taken to E. Tawas, placed in casket and shipped to E. Saginaw.

6. Wheelsman—Ed. Owen. Body found by fishermen near Bay Port, had on life preserver, body brought to E. Tawas, identified by his wife and buried.

7. Carpenter—Louis Lafrenier. Body found several miles north of Sable, taken to Sable, buried, taken up and shipped to Cleveland.

8. Unknown—Body found by Walter Scott south of Fish Point. Tattoo on right hand below thumb, A G M, dark brown hair, mixed with grey, dark red sweater, congress shoes, taken to E. Tawas and buried.

9. Unknown—Body found near McPhail's. Tattoo mark on arm, double U. S. flag over two clasped hands, initials E X B over double hearts, new lace shoes, white silk handkerchief around neck, large man, 6 feet tall. Taken to E. Tawas and buried. Found by one of life saving crew and Mr. Scott.

10. Unknown—Body of young man, about 18. Five feet six tall, dark hair, found by Alex Howie, and taken to E. Tawas and buried. He was found a mile above McPhail's.

11. Unknown—Body found floating in Lake Huron about five miles south of Baltimore wreck, by H. C. Bristol. Rope around waist of body, dark hair, short sack coat, fine underwear, lady's gold ring, one ruby setting, tied around neck with shoe string, envelope in pocket addressed to Miss Louise Zeigler, 807 Court street, St. Joseph, Mich., a diary 1900, with only address P. Riordan, 3917 Indiana Ave, Flat 7, in it.

12. Unknown—Body found July 12 near West Bay City Water Works, too much decomposed to identify.

13. Not found.

14. Rescued—Second Engineer—Thos. Murphy.

15. Rescued—Deckhand—Geo. McGinness.

Both picked up from a small piece of wreckage by tug Columbian, Capt. Marks and Mate H. H. Hickmott.

usual provision that lighterage, if any, to deliver the cargo at the port of destination, should be paid by the receivers, any custom of the port notwithstanding. As authorized by the charter, New York was designated by the charterers as the port of delivery, and the dock of the consignees, which was above the Brooklyn Bridge, as the place of discharge. Such dock was a safe one, at which the vessel could discharge afloat, and was a customary place, from seventy-five to eighty-five per cent of all sugar received at New York being discharged at docks above the bridge, but the ship was equipped with immovable iron masts of exceptional height and unusual construction, which prevented her from passing under the bridge unless they were cut off, and she was consequently discharged by lighters. There was no custom of the port in respect to such cases, and the evidence showed but three previous cases in which vessels had been unable to pass the bridge by reason of the height of their masts, and in such cases the masts had been cut. Held, that the provision of the charter requiring the consignee to pay the cost of lighterage was not intended, and could not fairly be construed, to apply to conditions so unusual; and that since the inability of the vessel to reach the dock, which ninety-nine per cent of all vessels could reach safely, was due solely to her exceptional construction, the cost of lighterage must be borne by the owners, in the absence of express provision in the charter to the contrary. Mencke vs. A Cargo of Java Sugar ex Ship Benlarig et al. 108 Fed. Rep. (U. S.) 89.

Seamen—Injury While in Service—Duty of Ship.—Under the maritime law, a seaman who receives an injury while in the service of the ship is entitled to medical care, nursing, and attendance, and to a cure, so far as a cure is possible, at the expense of the ship, and it is the duty of the master, for the performance of which the owners are responsible, to take all reasonable measures to that end. Whitney et al. vs. Olsen, 108 Fed. Rep. (U. S.) 292.

Admiralty—Review on Appeal—Questions of Fact.—In cases on appeal in admiralty, the decision of the district court on questions of fact, depending upon contradictory evidence taken in open court, will not be reversed, unless clearly against the evidence. Whitney et al. vs. Olsen, 108 Fed. Rep. (U. S.) 292.

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For further particulars see
"Passenger Lines on the Lakes,"
page 18.

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CLEVELAND AND CANADA.—Lake Erie Navigation Co., Walkerville, Ont.

CHICAGO, MILWAUKEE AND MICHIGAN PORTS.—Goodrich Transportation Co., Chicago.

CLEVELAND AND BUFFALO, N. Y.—Cleveland & Buffalo Transit Co., Buffalo.

TORONTO, MONTREAL, AND QUEBEC.—Richelieu & Ontario Navigation Co., Montreal.

CHICAGO, ST. JOSEPH AND BENTON HARBOR.—Graham & Morton Line, Benton Harbor, Mich.

TOLEDO, WINDSOR AND SAULT STE. MARIE, ALSO "SOO" TO MICHIGAN PORTS.—Algoma Central Steamship Line, Sault Ste. Marie, Ont.

BUFFALO, CLEVELAND, DETROIT, "SOO," AND DULUTH.—The Erie & Western Transportation Co. (Anchor Line), Buffalo.

CHICAGO, CHARLEVOIX AND MACKINAW.—Manitou Steamship Co., Chicago.

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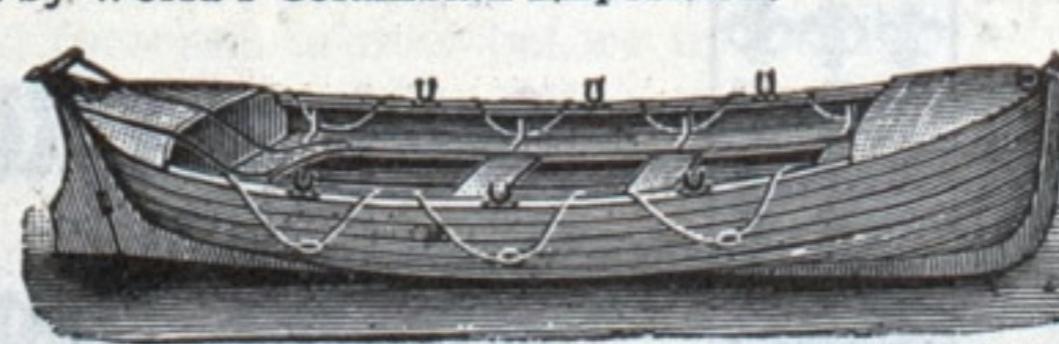
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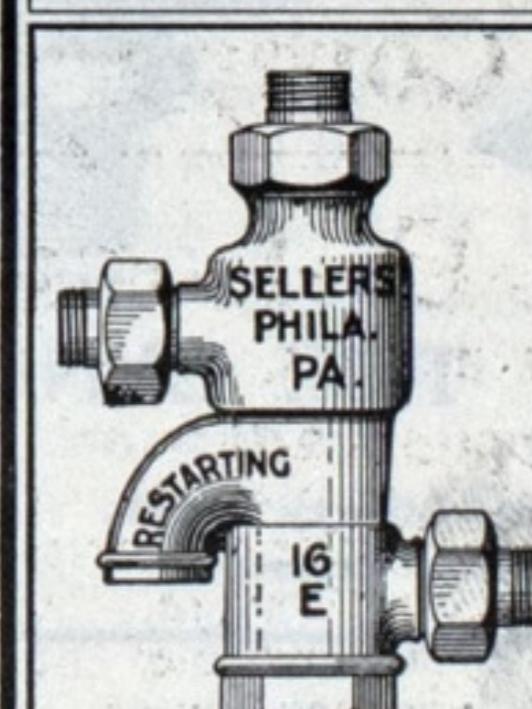
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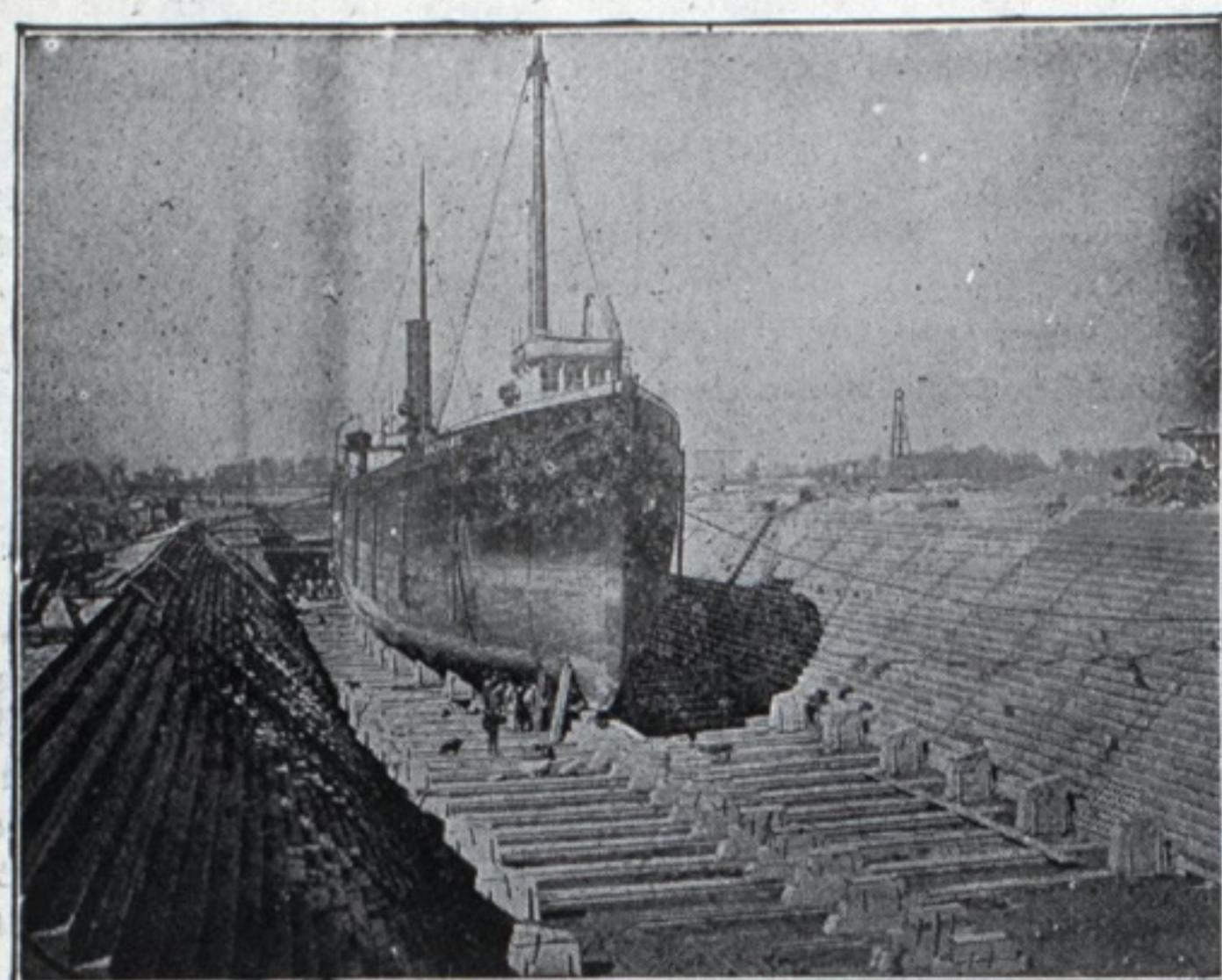
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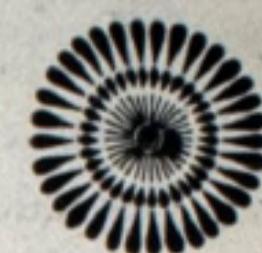
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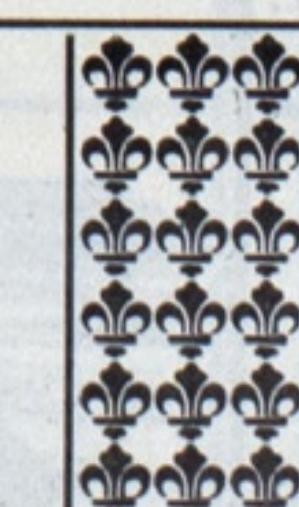
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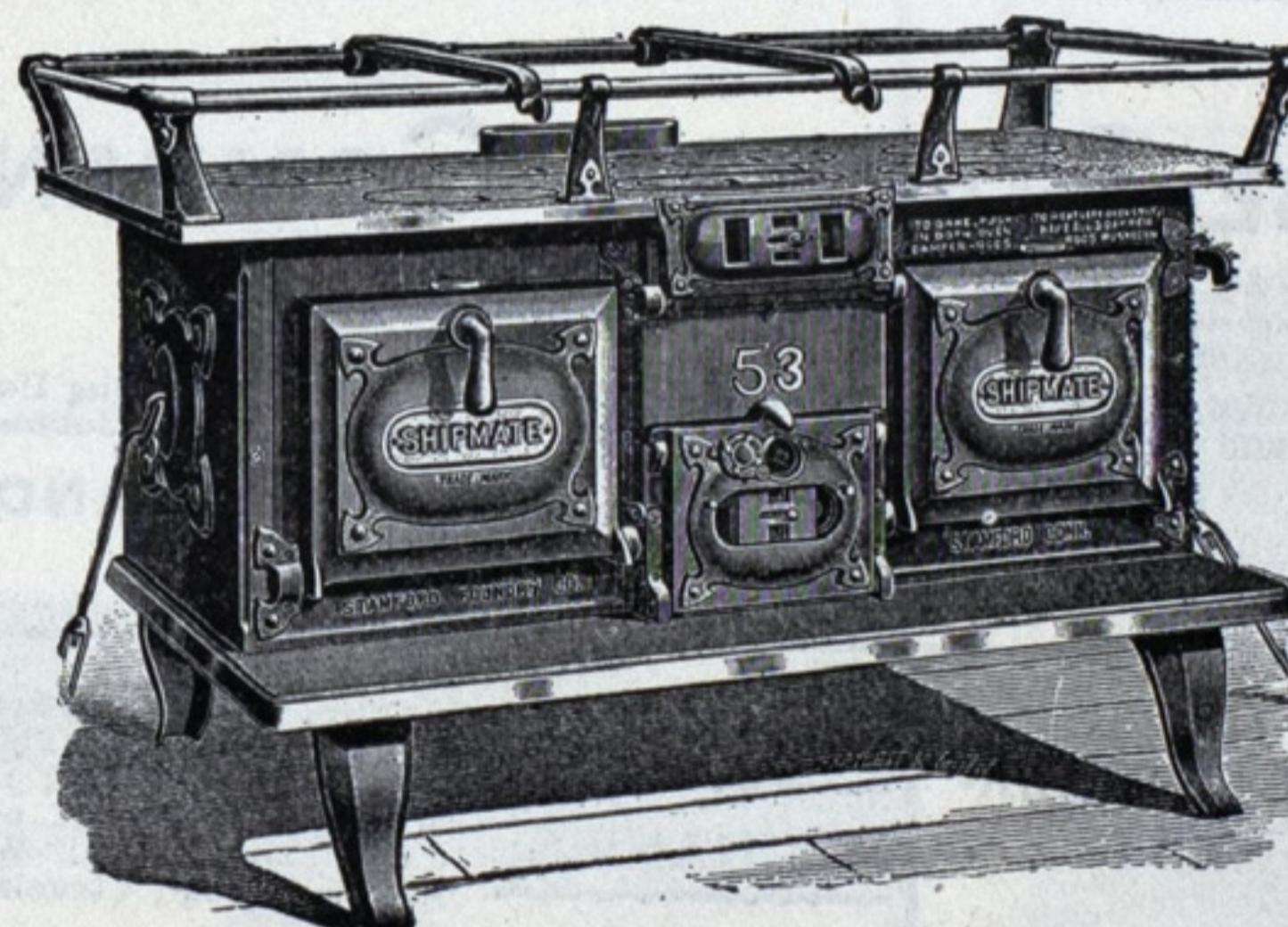
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